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COLLEGE OF
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COLLEGE RECORD

Vol. 7

MAY 1914

No. 4

TWENTY-FOURTH ANNUAL CATALOG

New Mexico College of Agriculture and Mechanic Arts

STATE COLLEGE, NEW MEXICO

Catalog
for
1913-1914.

Announcement
for
1914-1915.

Published Quarterly by the College

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REPUBLICAN
Las Cruces
1914

BOARD OF REGENTS

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HON. A. N. WHITE, State Superintendent of Public Instruction, Santa Fe.

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1914-15

Calendar for 1914-1915

September 1, Tuesday, Registration and Entrance Examinations.

September 2, Wednesday, Recitations begin.

October 22, 23, Thursday and Friday, Quarterly Examinations.

November 26, Thursday, Thanksgiving Day.

December 16-18, Wednesday-Friday, Examinations, end of First Semester.

December 19-January 3, Christmas Vacation.

January 4, Monday, Registration and Supplementary Examinations.

January 5, Tuesday, Recitations begin.

March 11, 12, Thursday and Friday, Quarterly Examinations.

May 24, 25, 26, Monday, Tuesday, Wednesday, Examinations.

May 22, Saturday, Closing Exercises of the Music Department.

May 23, Sunday, Baccalaureate Sermon.

May 26, Wednesday, Closing Exercises of Preparatory Department.

Senior Class Day.

Alumni Banquet.

May 27, Thursday, Commencement Exercises, 10 a. m.

Alumni Business Meeting.

FACULTY

OFFICERS OF ADMINISTRATION

GEORGE E. LADD, President.

FABIAN GARCIA, Director of the Experiment Station.

O. WETTLAUER, Registrar.

MARY F. WINNINGHAM, Dean of Women.

GEO. E. LADD, Ph. D., President and Professor of Geology.

A. B., Harvard University, 1887; A. M., *ibid.*, 1888; Ph. D., *ibid.*, 1894; student University of Munich, 1894-5; Assistant in Geology, Harvard, 1892-4; Instructor in Geology, *ibid.*, five summers; U. S. Geological Survey two years; President Missouri School of Mines, 1897-1907; President Oklahoma School of Mines, 1908-1913; President and Professor of Geology, New Mexico College of A. and M. A., 1913—

CLARENCE T. HAGERTY, M. S., Professor of Mathematics and Astronomy.

B. S., Notre Dame University, 1890; M. S., *ibid.*, 1896; Graduate student, Harvard University, Summer, 1891; Professor of Mathematics, New Mexico College of A. and M. A., 1891—

LUTHER FOSTER, M. S. A., Professor of Animal Husbandry.

B. S., Iowa State College, 1872; M. S. A., *ibid.*, 1886; Superintendent of Schools, Monticello, Ia., 1873-1883; Superintendent of Schools, Jones County, Ia., 1883-'85; Professor of Agriculture, South Dakota Agricultural College, 1885-1893; Director of South Dakota Experiment Station, 1890-'93; Professor of Agriculture and Botany, Montana State College, 1893-'96; Director of Experiment Station and Professor of Agriculture, Utah Agricultural College, 1896-1900; Professor of Agriculture and Horticulture, Wyoming State University, 1900-'01; President New Mexico College of A. and M. A., and Director of Experiment Station, 1901-'08; Director of Experiment Station and Dean of Agriculture, 1908-1913; Professor of Agriculture, 1913-'14; Professor of Animal Husbandry, 1914—

RALEIGH FREDERICK HARE, Ph. D., Professor of Chemistry and Vice Director of the Experiment Station.

B. S., Alabama Polytechnic Institute, 1892; M. S. *ibid.*, 1893; Ph. D., Columbia University, 1911; Assistant Professor of Chemistry, New Mexico College of A. and M. A., 1892-1903; Professor of Chemistry, *ibid.*, 1903—

FABIAN GARCIA, M. S., Director of the Experiment Station and Professor of Horticulture.

B. S., New Mexico College of A. and M. A., 1894; M. S., *ibid.*, 1905; Graduate student, Cornell University, 1899-1900; Assistant and Assistant Professor of Agriculture and Horticulture, New Mexico College of A. and M. A., 1894-1904; Professor of Horticulture, *ibid.*, 1904; Director of Experiment Station, 1913—

MERRITT LORRAINE HOBLIT, A. B., Professor of Latin and Modern Languages.

A. B., Kalamazoo College, and University of Chicago, 1901; Instructor in French and Spanish, Drake University, 1899-1900; Instructor in French and Spanish, Kalamazoo College, 1900-'01; Instructor in Romance Languages, Drake University, (on leave from N. M. A. C.), 1906-'07; Professor of Latin and Modern Languages, New Mexico College of A. and M. A., 1902—

*ARCHIBALD BRUCE SAGE, M. S., Professor of Mechanical and Electrical Engineering.

West Virginia University, 1896-'99; B. S., New Mexico College of A. and M. A., 1900; M. S., *ibid.*, 1911; Assistant and Assistant Professor of Mechanical Engineering, *ibid.*, 1900-'07; Professor of Mechanical and Electrical Engineering, *ibid.*, 1907-1914.

JOHN H. VAUGHAN, A. M., Professor of Economics.

A. B., University of North Carolina, 1904; A. M., *ibid.*, 1905; Principal of Roswell High School, 1906-'07; Professor of History and English, New Mexico Normal University, 1907-'09; Professor of History and Political Science, New Mexico College of A. and M. A., 1909—

FREDERICK LOUIS BIXBY, B. S., Professor of Civil and Irrigation Engineering.

B. S., in C. E., University of California, 1904; Assistant Engineer with Oregon Short Line R. R., 1905-'07; Civil Engineer, Salt Lake City, 1907-'08; Irrigation Engineer with Office of Irrigation Investigations, U. S. Department of Agriculture, 1908-'10; Professor of Civil and Irrigation Engineering, New Mexico College of A. and M. A., 1910—

EUGENE P. HUMBERT, Ph. D., Professor of Agronomy.

B. S. A., Iowa State College, 1906; M. S., Cornell University, 1908; Ph. D., Cornell University, 1910; Instructor in Farm Crops, Iowa State College, 1906-07; Expert and Plant Physiologist for U. S. Department of Agriculture, 1908-1910; Associate Biologist, Maine Agricultural Experiment Station, 1910-1911; Professor of Agronomy, New Mexico College of Agriculture and Mechanic Arts, January 1, 1912—

PEARL CHERRY MILLER, B. S., Professor of Household Economics.

B. S., New Mexico College of A. and M. A., 1904; B. S., Drexel Institute, 1906; Instructor in Domestic Science, Sherman Institute, Riverside, Cal., 1907-'10; Professor of Household Economics, New Mexico College of A. and M. A., 1910—

*Resigned June, 1914.

FRANK STOCKTON, B. S., Professor of Physics.

Graduate Nebraska State Normal, 1901; B. S. University of Nebraska, 1907; Assistant in Physics and Soil Physics, New Mexico College of A. and M. A., 1907-'09; Assistant Professor of Physics, *ibid.*, 1909-'12; Associate Professor of Physics, 1912-1913; Professor of Physics, 1913—

*HOWARD SPURR HAMMOND, A. M., Professor of Biology.

A. B., Ohio State University, 1908; A. M., University of Illinois, 1909; Instructor in Botany, Iowa State University, 1909-'10; Assistant Professor of Biology, New Mexico College of A. and M. A., 1910-'12; Associate Professor of Biology, 1912-'13; Professor of Biology, 1913-'14.

*THOMAS J. GUILFOIL, Registrar and Instructor in Commercial Department, 1913-'14.

FREDERICK WALDEMAR CHRISTENSEN, M. S., Associate Professor of Chemistry.

B. S., Kansas State Agricultural College, 1900; Graduate student, *ibid.*, 1903-'04; Assistant Expert in Animal Nutrition, Bureau of Animal Industry, U. S. Department of Agriculture, 1904-'05; Assistant in Animal Nutrition, Pennsylvania State College, 1905-'08; M. S., *ibid.*, 1908; Graduate student, University of Chicago, 1908; Graduate student, Yale University, 1908-'09; Assistant in Animal Nutrition, Pennsylvania State College, 1909-'10; Associate Professor of Chemistry, in charge of experimental work in Animal Nutrition, New Mexico College of A. and M. A., 1910—

*SINGLETON REYNOLDS MITCHELL, M. S., Assistant Professor of Chemistry.

B. S., Purdue University, 1902; M. S., New Mexico College of A. and M. A., 1909; Assistant in Chemistry, *ibid.*, 1902-'09; Assistant Professor of Chemistry, *ibid.*, 1909-1914.

GEORGE PATRICK STOCKER, B. S. in C. E., Associate Professor of Mathematics and Civil Engineering.

Graduate Platteville, Wis., State Normal, 1902; B. S., in C. E., University of Wisconsin, 1909; Assistant Professor of Mathematics and Civil Engineering, New Mexico College of A. and M. A., 1909-'13; Assistant Professor of Civil Engineering, 1913-'14; Associate Professor of Civil Engineering, 1914—

ARTHUR HILL BADENOCH, Professor of Physical Education.

University of Chicago, 1904-'06; Athletic Director, Rose Polytechnic Institute, 1906-'07; Athletic Director, Brigham Young College, Logan, Utah, 1907-'08; Director of Athletics, Illinois Athletic Club, Chicago, 1908-'10; Professor of Physical Education, New Mexico College of A. and M. A., 1910—

SEIBERT S. HOOKLAND, Professor of Commerce.

Graduate State Normal School, Winona, Minn., 1887; Graduate student, University of Wisconsin, 1887-'89; Lutheran Theological Seminary, Chicago, 1897-'98; Principal Commercial Dept., Caton College, 1889-1894; Principal Queen City Business College, Sioux Falls, S. D., 1894-'96; Principal Commercial Dept., Archibald Business College, Minneapolis, 1896-'7; Principal Commercial Dept., Banks Business College, Philadelphia, 1901-'05; Dean of Dept. of Commerce, Highland Park College, Des Moines, 1905-'07; Assistant Professor of Commerce, New Mexico College of A and M. A., 1910-1913; Professor of Commerce, 1913—

WILLIAM T. CONWAY, B. S., Superintendent of Extension Work and Assistant Professor of Agronomy.

A. B., Ouachita College, 1894; B. S., Oklahoma A. and M. College, 1910; Principal of Prep. Department, Kendall College, 1898-1902; Vice-President of Indianola College, 1902-'05; Principal of High School, Sulphur, Okla., 1906-'09; Supt. of Extension Department, New Mexico College of A. and M. A., 1911—

D. E. MERRILL, M. S., Assistant Professor of Biology.

B. S., State University of Iowa, 1907; M. S., *ibid.*, 1910; Instructor in Biology, Boone, Iowa, High School, 1907-'08; Fellow in Zoology, State University of Iowa, 1909-'11; Assistant in Zoology, Summer Sessions, *ibid.*, 1910 and 1911; Assistant Professor of Biology, New Mexico College of A. and M. A., 1911—

*LLOYD BLAINE SELBY, M. E., Assistant Professor of Mechanical Engineering.

B. S. in M. E., West Virginia University, 1908; M. E., *ibid.*, 1909; Instructor in Drawing and Mechanics, North Carolina College of A. and M. A., 1909-'11; Assistant Professor of Mechanical Engineering, New Mexico College of A. and M. A., 1911-'14.

*JOSEPHINE MORTON, A. B., Librarian.

A. B., Drury College, 1898; Teacher of Latin, Iberia Academy, 1899-1902; Assistant Librarian, Owatonna, Minn., Public Library, 1902-'05; Librarian, *ibid.*, 1905-'07; Assistant Librarian, New Mexico College of A. and M. A., 1907-'11; Librarian, 1911-'14.

*RAY MILTON WILCOX, B. E., Instructor in Public Speaking.

A. B., Knox College, 1907; B. E., Columbia College of Expression, 1908; Assistant in English, in charge of Public Speaking, New Mexico College of A. and M. A., 1908-'14.

*CLARENCE CLYDE WINN, B. S. in M. E., Assistant in Mechanical and Electrical Engineering.

B. S. in M. E., Purdue University, 1908; Assistant in Mechanical and Electrical Engineering, New Mexico College of A. and M. A., 1911-'14.

*FANNIE FORD, M. S., Assistant in Mathematics.

B. S., New Mexico College of A. and M. A., 1903; M. S., *ibid.*, 1912; Teacher in Public Schools, Las Cruces, N. M., 1903-'09; Assistant in Mathematics, Preparatory Department, New Mexico College of A. and M. A., 1909-'14.

*RUTH THOMPSON, B. S., Assistant in Household Economics.

Graduate Throop Polytechnic Institute, 1910; B. S., New Mexico College of A. and M. A., 1912; Assistant in Household Economics, New Mexico College of A. and M. A., 1910-'14.

*THORA LUTE FOSTER, B. S., Instructor in Piano.

B. S., New Mexico College of A. and M. A., 1904; Columbia School of Music, Chicago; Pupil of Clare Osborne Reed, Gertrude H. Murdough, and Instructor in Piano, New Mexico College of A. and M. A., 1908-'10; On leave 1910-'11, 1911-'1914.

MARY F. WINNINGHAM, A. B., Dean of Women and Instructor in Mathematics and Latin.

A. B., Arcadia College; Student Cape Girardeau, Mo., Normal School; Principal of High School, West Plains, Mo., 1900-'10; Superintendent of Schools, West Plains, 1910-'11; Dean of Women and Instructor in Mathematics and Latin, New Mexico College of A. and M. A., 1911—

JOSEPH WHEELER RIGNEY, Assistant Professor of Horticulture.

B. S., New Mexico College of A. and M. A., 1911; Assistant in Horticulture, *ibid.*, 1910-'13; Assistant Professor of Horticulture, 1913—

JAMES RICHARD QUESENBERRY, B. S., Assistant in Animal Husbandry.

B. S., New Mexico College of A. and M. A., 1912; Assistant in Animal Husbandry, 1912—

†RUPERT L. STEWART, B. S., Assistant in Agronomy.

B. S., New Mexico College of A. and M. A., 1911; Assistant in Agronomy, 1911-'13.

JOSEPH W. WIGGS, A. B., Assistant in English.

Ed. B., Oakland City College, 1905; A. B., University of Denver, 1914; Public School work, 1905-'11; Assistant in English, 1912—

JOHN ALVIN ANDERSON, B. S., Secretary to the President and Editor of Publications.

B. S., New Mexico College of A. and M. A., 1912; Assistant Registrar and Assistant in Stenography, 1906-'11, 1912-'13; Secretary to the President and Editor of Publications, 1913—

*Resigned June, 1914.

†Resigned October, 1913.

WALTER S. CUNNINGHAM, B. S., Assistant in Animal Husbandry.

B. S., Purdue University, 1909; Assistant in Animal Husbandry, 1912—

L. R. MCNEELY, B. S., in Ag., Assistant in Agronomy.

B. Pd., Third District Mo. State Normal, 1907; B. S. in Ag., University of Missouri, 1912; Assistant in Agronomy, Jan., 1913—

GEORGE W. KABLE, B. S., Assistant in Irrigation.

B. S., University of California; Assistant in Irrigation, New Mexico College of A. and M. A., 1913—

LEON J. COCHRANE, A. B., Instructor in Stenography.

A. B., Syracuse University, 1912; Instructor in Stenography, 1913—

O. WETTLAUER, Registrar.

*A. J. ENGQUIST, Assistant Registrar.

ROLAND HARWELL, Assistant in Agronomy and Farm Superintendent.

EDNA E. ANDERSON, Assistant Librarian.

P. W. MARQUETTE, Instructor in Manual Training.

DEAN W. BLOODGOOD, B. S. in M. E., Assistant in Irrigation.

B. S. in M. E., New Mexico College of A. and M. A., 1908; Assistant in Irrigation, 1912—

CLARENCE P. WILSON, M. S., Stenographer in Experiment Station.

JOSE QUINTERO, B. S. in M. E., Assistant in Chemistry.

B. S. in M. E., New Mexico College of A. and M. A., 1907; Assistant in Chemistry, 1911—

*ETHEL MACIVER, Matron of Girls' Dormitory.

WILLIAM C. WEIR, Custodian of Buildings.

LOCATION

The New Mexico College of Agriculture and Mechanic Arts is located at Mesilla Park, New Mexico, in the Rio Grande Valley, in the central southern part of the State. The College buildings are about one mile from the Mesilla Park railway station, and about two and one half miles from the town of Las Cruces, county seat of Dona Ana county, and forty miles north of El Paso, Texas. The main line of the A. T. & S. F. Railway from Chicago to El Paso runs through the college property.

This region, known as the Mesilla Valley, is one of the richest agricultural districts in New Mexico. There are 25,000 acres of land under irrigation within 10 miles of the College. All of this land is under the great Elephant Butte Dam and Engle Reservoir, which when completed, at an estimated cost of \$8,000,000, will be the greatest work yet undertaken by the United States Reclamation Service.

The College has its own postoffice, the name of which is State College, New Mexico. The railroad, express, and telegraph address is Mesilla Park, New Mexico.

EDUCATIONAL PURPOSE

The purpose of this institution is expressed in the words, "liberal and practical education." The aim is to teach the student those things which make for intelligent manhood and citizenship, and also to give him some special training which will enable him to earn a living. All the courses contain both cultural and technical work. The purpose of the technical and industrial work is to teach him to make a better living; the purpose of all the work, both technical and cultural, is to teach him to live a richer and more useful life.

The following courses of study are offered:

College Courses

- I Agriculture.
- II Mechanical Engineering
- III Electrical Engineering.
- IV Civil Engineering.
- V Household Economics.
- VI General Science.

Each of these COLLEGE COURSES presupposes a full high school course for entrance, and requires four years for completion. They are, with the exception of the General Science Course, professional courses. Each of them includes a thorough grounding in the fundamental sciences, a certain amount of general cultural work in English, history, economics and languages, and a large amount of both theoretical and practical work in the special subject of the course. We expect those who complete these courses to be men and women of broad general education, with full technical equipment for the work of their several professions.

The degree of Bachelor of Science is given on completion of any of the college courses.

Secondary Courses

- I College Preparatory.
- II Industrial Course in Agriculture.
- III Industrial Course in Mechanics.
- IV Industrial Course in Domestic Science.
- V Industrial Course in Business.

The *College Preparatory Course* gives the equivalent of the work done in a four-year high school course. The scarcity of good high schools in New Mexico makes it necessary to offer such a course for the benefit of students preparing for college. It is not the purpose of this department to attract students away from the schools of their home towns, but to

provide a standard preparatory course with a high grade of instruction and equipment for students who do not find these facilities at home.

The *Industrial Courses* are courses of high school grade, the purpose of which is to prepare students for life instead of preparing them for college. Especial attention is invited to the outline of these Industrial Courses (pages 42 to 45), for they represent an effort along somewhat new lines to adapt technical education to the needs and condition of the majority of young people in New Mexico. It will be seen that in each course the students spend about two-thirds of their time in English, mathematics, history, and the natural sciences, and about one-third in industrial work of a practical and vocational nature, with a large amount of laboratory and practice work. These courses are for the boy or girl who does not expect to take a college course but wants something of more practical value than the ordinary high school course. It will be noticed that the work of the first and second years in these Secondary and Industrial Courses is the same. The Industrial subjects begin with the third year. Mature students who are desirous of concentrating their efforts on Industrial work, may, at the discretion of the faculty, be permitted to begin the course at the third year.

A student who finishes the Industrial Course in Agriculture ought to be a practical and intelligent farmer. He will not be a profound specialist in agriculture, but he ought to be able to manage a farm by modern methods and make money, and he ought furthermore to be an intelligent and useful citizen and a helpful member of society.

The boy who completes the Industrial Course in Mechanics should be a competent shop foreman, power-house superintendent, foreman on construction work, machinist, or electrical worker, or after some experience should be prepared for building and contracting.

The Business Course aims to give the most serviceable

training to boys who expect to go into business either as clerks, salesmen, agents, bookkeepers, accountants, bank employes, managers or proprietors of stores. It is not a course in stenography.

The Domestic Science Course will teach a girl how to cook plain wholesome meals, sew, care for the sick, furnish a house, maintain sanitary conditions, manage the affairs of a household. The art of living within one's income will receive special attention.

These are all practical courses. They are not preparatory courses in the sense of being designated to meet entrance requirements for higher courses. They are intended especially for students who expect to go no further. Those who expect to take a full college course are urged to prepare for it by taking the college preparatory course.

A one-year course is offered in Stenography and Typewriting, and a second year in Advanced English Stenography or Spanish Stenography. The demand for competent stenographers who can take dictation and conduct correspondence in both English and Spanish is greatly in excess of the supply. Students who wish to begin the course in stenography must be at least sixteen years of age, and must have a good English education. A full high school course is desirable. A mere knowledge of stenography does not make a successful stenographer. Nine-tenths of the poor stenographers are inefficient because of a lack of general education, and especially because of the lack of a thorough knowledge of the English language.

One Year Trades Courses

To meet the needs of young men who wish short practical courses but may not be able to meet the ordinary entrance requirements, a one-year course is offered. Students in this course will spend the morning in classes in Arithmetic and the English language suited to their needs, and the entire afternoon is devoted to shop instruction, given by a competent workman. A knowledge of English is not required for entrance, but applicants must be at least sixteen years old.

A fuller announcement of these courses will be found on another page of this catalog.

REQUIREMENTS FOR ADMISSION

COLLEGE COURSES. For entrance to the Freshman class in any of the college courses, a student must present credits amounting to a four-year high school course of not less than fifteen units. (A unit is the equivalent of one hour of recitation or two hours of laboratory work daily for thirty-six weeks). Special cases of mature students who wish to pursue college courses, but cannot present formal credits covering the required amount of preparatory work, will be considered on their merits.

It is recommended that the credits offered for entrance conform as nearly as possible to the course of study of the College Preparatory Course (page 40). A student, regardless of the number of units offered for entrance, will be conditioned in any preparatory subject which he has not had that must necessarily precede a required subject in his college course.

SECONDARY COURSES. To enter the first year of the college preparatory or any of the industrial courses, the student must have completed the eighth grade in the common schools. The four years of the secondary courses correspond to the four years of the high school, and students who have had a part of a high school course will receive credit accordingly.

STENOGRAPHY. The student should, if possible, complete a high school course or its equivalent before beginning the study of stenography. It is especially important that there be sound preparation in English. No student will be accepted as a candidate for the certificate in this course who cannot present evidence of being qualified to take Freshman English.

CREDENTIALS. The student who expects to matriculate in this institution and wishes to receive credit for work done in some other school is advised to send his credentials to the

President during the summer vacation, together with a definite statement of what course he wishes to enter. If for any reason such credentials cannot be sent in advance of the student's arrival, he must be sure to bring them; otherwise he may be required to take the entrance examinations.

TIME TO MATRICULATE. *Particular attention is called to the fact that it is very much to the advantage of the student to be on time for matriculation. By doing so he avoids all loss of recitations at the beginning of his course as well as the payment of the fee referred to on page 20.*

Special Students

Students of mature age, or those who have clearly defined special needs which are not served to the best advantage by any of the regular courses, may be admitted as special students. A student cannot become a special by failing in any part of his college work, or merely for the purpose of avoiding some college requirement. Before a student will be classified as a special student, he must:

1. Present to the President a written statement of his reason for wishing to take a special course. Such statement must show a serious purpose and desire to accomplish a regular course. It should include a statement of the line of work desired and, in the case of a new student, should be accompanied by a statement of the work already done in other institutions.
2. If a minor, present the written consent of the parent or guardian.
3. Obtain the approval of the President.
4. Pay a fee of five dollars a year in addition to the fees paid by regular students.

A student who has been accepted as a special student may elect any courses offered either in the college, the prepar-

atory, or the secondary technical courses, subject to the approval of the head of the department, who shall be the judge of his preparation for the work desired.

The institution offers a large variety of courses, both secondary and collegiate, so that, in all but very exceptional cases, the student will find a regular course to meet his needs. It is particularly urged that, so far as possible, all students enroll in regular courses. At the same time, it should be understood that the entire resources of the institution are open to the serious student with a definite purpose which cannot be served properly by a regular course.

Irregular Students. Students who, at the time of their entrance, are deficient in certain subjects or have credits in excess of those required, and students who fail in one or more subjects, may be temporarily irregular. They will be enrolled with the class to which they most nearly belong and will be held to the requirements of the course and class in which they are enrolled. The fact that a student is irregular will not be considered as a reason for enrolling him as a special and releasing him from the requirements of the regular courses.

FEES AND DEPOSITS

The following yearly fees and deposits are due at the time of registration:

Entrance Fee	\$20.00
*Library Deposit	2.50
Military Uniform	\$18.00 20.00
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Total	\$42.50

*The Library Deposit is refunded to the student at the close of the year, or upon withdrawal from College, less charges for damage to or loss of College property.

The military uniforms are made to individual measure,

are furnished the College at a low wholesale price, and are sold to students at cost. The amount mentioned above is the price paid for the two complete uniforms required. For description, see Military Department.

Students from states other than New Mexico pay a tuition fee of ten dollars a year, and students from foreign countries fifty dollars a year, in addition to the entrance fee.

Those who enter at any other time than upon the days announced as regular registration days, pay a late registration fee of one dollar.

Special students pay an extra fee of five dollars.

Students in furnace assaying pay an additional fee of \$7.50.

No portion of the fees will be refunded to students who leave school before the close of the year.

The following deposits are required for courses in which breakable apparatus is used by students: Chemistry, five dollars. Furnace Assaying, ten dollars. Mechanical Engineering, five dollars. These deposits are refunded, less charges for breakage or damage.

Any student who ceases to attend classes for one week without excuse, or who leaves College without having secured a withdrawal card and an honorable dismissal, will be considered as dismissed without honor and will forfeit all deposits.

For rates for private instruction in music, see Department of Music.

Text-books and stationery are sold to students at cost at the College book store and supply room.

BOARD

The College dining hall in McFie Hall has accommodations for about one hundred persons, or about fifty more than the number who room in the building. A large number of the young men take their meals there. The price of board without room at McFie Hall is \$16 a month, payable in advance at the Registrar's office. This is absolute cost. In the vicinity are several private families who accommodate students with board, and a number of boarding houses.

GIRLS' DORMITORY

McFie Hall, the dormitory for young women, will accommodate about fifty students. The price for board per calendar month, with room, light and heat, is \$20 when two young women occupy a room, payable in advance on the first of each month. Young women who desire to occupy a room alone will be charged \$24.00 per month. The rooms are comfortably furnished, but each student must provide comforts, blankets, sheets, pillow-slips, towels, napkin, napkin-ring, and two laundry bags. The student's name must be plainly marked on all pieces. A spoon and glass should be brought for use in the room.

All young women students are under the supervision of the Dean of Women, who is also the head of McFie Hall. Rooms should be reserved in advance by addressing the Dean of Women or the Registrar.

It is the policy of the College that young lady students shall be required to room and board at the Girl's Dormitory unless they stay with relatives or others in the vicinity who will be fully responsible for them as guardians or chaperones.

BOYS' DORMITORY

On the college campus near the Science Hall is the Boys' Dormitory which will accommodate about sixty students. Room rent in this building is \$4 a month for each boy, two in a room. The young men are also expected to furnish their bedding (except mattress and pillow). The price named covers the cost of light and heat and the washing of bed linen. The dormitory is in charge of a member of the faculty and study hour periods are enforced. There is no dining hall in connection with the building, but boys who room in this dormitory can secure board at McFie Hall.

ESTIMATE OF NECESSARY EXPENSES

Matriculation Fee	\$ 20.00	\$ 20.00
Nine months' board and lodging at \$20 to \$24	180.00 to	216.00
Laundry per month at \$1.00	9.00	9.00
Books and Stationery	10.00	20.00
Military Uniform	18.00 to	20.00
Incidentals	10.00	15.00
	<hr/>	<hr/>
	\$247.00 to	\$300.00

The average actual expense is about \$275 for the college year, including uniform, but not including other clothing and traveling expenses. The matriculation fee named above carries with it the privilege of attending all athletic contests held under the direction of the Department of Physical Education, admission to all numbers of the College Lyceum Course and one copy of the annual publication of the Junior Class, "The Swastika," without additional cost to the student.

When satisfactory advance arrangements are made with the Registrar charge accounts of students will be opened covering expenses for board and room, textbooks, and sundry school

supplies such as are kept for sale at the College. Settlement may be made by parents for such accounts on itemized statement rendered monthly by the Registrar.

Where advisable, student funds may be deposited with the Registrar and paid out at the direction of the students or their parents. This practice is encouraged as it makes for economy and affords parents the opportunity of keeping expenses down to the minimum.

SELF SUPPORT

There is considerable labor on the farm, in the shops, and in the laboratories, that can be performed by students, and the policy is to give it to students rather than to others. Some students have been able to earn enough money during the year to pay their expenses; but those doing so have had constant employment in some subordinate position. The College cannot guarantee to furnish work for all students who wish it, or need it, in sufficient amount to pay expenses, but the college stands ready to help every worthy and industrious student who wants to help himself. In assigning work, preference is given to those who are most worthy and meritorious, and who are regular and punctual in attendance, and correct in deportment. This labor is paid for at the rate of from $12\frac{1}{2}$ to 20 cents per hour, but the College reserves the right to limit the amount of work any student may do. In general, an energetic young man who wishes to work can count on earning enough to meet about half of his expenses. Many do better than this.

DEGREES

The degree of *Bachelor of Science* (B. S.) is conferred upon students who satisfactorily complete the work prescribed in any of the collegiate courses of study, but in order to receive the B. S. degree students are required to spend at least one year immediately before graduation in this institution.

The degree of *Master of Science* (M. S.) is conferred upon students of this institution who, after taking the degree of B. S., pursue for at least one year in residence, or for two years as non-resident students, a course of study approved by the faculty, pass an examination upon the same, and present a satisfactory thesis. Students of other institutions of similar character and equal rank, holding the bachelor's degree and desiring to take the M. S. degree from this institution, are subject to the same requirements as above, except that they must spend the year next preceding the granting of the degree in resident study.

Regarding graduate courses of study, the following rules must be observed.

1. The course shall consist of work equivalent to twenty lecture hours per week, and shall be distributed between one major and one minor.

2. The major, covering fifteen hours, shall be advanced work not offered to undergraduates, in line with the candidate's principal work leading to the B. S. degree, and at least half of it shall be devoted to research whose results shall be embodied in a thesis.

3. The minor, covering five hours, may be chosen from a line distinct from that of the major, and may include work offered to the undergraduates of the Junior and Senior years.

4. The candidate must pass a satisfactory examination upon his work and present his thesis for final approval in typewritten form ten days before commencement.

In bachelor's diplomas the course completed by the student may, at his option, be indicated parenthetically.

In masters' diplomas, at the discretion of the faculty, the degrees of M. S. A. (Master of Scientific Agriculture) and M. E. (Mechanical Engineer) may be substituted for M. S. in the case of students of Agriculture and Mechanical Engineering.

BUILDINGS AND EQUIPMENT

The property of the College includes an irrigated experimental farm of about 200 acres, and about an equal amount of unirrigated land. The campus upon which the principal buildings are located, consists of about twenty acres irrigated from a large pumping plant. The buildings include the following:

HADLEY HALL, Administration Building, containing offices of administration, the assembly hall, the library, the department of Household Economics, the college book store, and the postoffice.

WILSON HALL, Agricultural Building, containing class rooms, laboratories, and offices for the departments of Agronomy, Animal Husbandry, Horticulture, Civil and Irrigation Engineering, and the Agricultural Experiment Station. The basement contains a well equipped Dairy laboratory.

BOYS' DORMITORY, a two-story brick building containing rooms for about sixty boys. The building has all modern conveniences, and is under the management of a member of the faculty who rooms in the building. The rooms are well furnished.

SCIENCE HALL, containing the class rooms and laboratories of the departments of Chemistry, Soil Physics and Biology.

ENGINEERING BUILDING, a three-story fireproof structure of reinforced concrete, erected in 1913. This building houses the departments of Mechanical and Electrical Engin-

ceering and Physics. The departments of English and Commerce are quartered here temporarily.

SHOP BUILDINGS, two very plain and unpretentious one-story buildings containing a large amount of floor space to provide additional accommodations for the department of Mechanical and Electrical Engineering, including recitation rooms, and forge and foundry shops.

Y. M. C. A. BUILDING, erected by private subscription at a cost of \$15,000, occupies a prominent position on the campus, and is the center of the religious and much of the social life of the College. The upper floor contains living rooms for eighteen young men, and the rental received helps to defray the expenses of the Association.

McFIE HALL, the dormitory for young women, is located a little apart from the other college buildings on the avenue which runs through the College farm from the main campus to Mesilla Park. It has all modern conveniences, including steam heat, electric light, and baths, and will accommodate about fifty people. The college dining hall is located here.

THE GYMNASIUM, erected in 1911, is used partly for a recitation building. The large room on the first floor is used for the Armory, and locker rooms, dressing rooms, bath rooms, and offices of the department of Physical Education will ultimately be situated in this building. The second floor consists of one large room, fifty by eighty feet, with a gallery all around containing a running track.

THE OLD MAIN BUILDING, which was the first building erected on the College campus, was completely destroyed by fire in September, 1910, and this loss creates an urgent need for a new building to supply additional class rooms.

OTHER BUILDINGS. In addition to the principal buildings above mentioned, there are numerous farm buildings: the seed house, green house, a large adobe corral with sheds for stock, feed and implements, a farm building on the horticultural farm, and two pump houses.

EQUIPMENT OF DEPARTMENTS. All the departments are well equipped with apparatus, material, books, and furniture for handling classes in their subjects. The institution pays fire insurance on a valuation of \$143,000 invested in equipment for the various College departments. This does not include the value of buildings and lands.

THE LIBRARY

One of the most important features of the College is its library, which, supplementing the work of the class or lecture room, is open for reference from eight to five every day except Saturday afternoons and Sundays, and whose books circulate among students and faculty with only slight restrictions. Both department and general library books are indexed in the general catalogue, making them all accessible. The library contains a representative collection of general literature, an excellent collection on agriculture and allied subjects; all available matter from the U. S. Department of Agriculture and the State Experiment Stations and a large amount from the various State Departments of Agriculture is on file. Much material from foreign countries has been catalogued during the past year, presenting a very complete view of the field of agricultural work at the present time. There are also excellent collections in the departments of Botany, Chemistry, and Mechanical Engineering, and the New Mexico material is being added to as opportunity arises.

The Reference Room contains a large and up-to-date collection, and encyclopedias, dictionaries and yearbooks are added as published. Many complete sets of bound periodicals, both technical and general, are on file here and are easily accessible by the aid of several indexes. The library has been a government depository since 1908 thus receiving much material of timely interest.

In the Reading Room there are on file 225 magazines,

journals and transactions of learned societies. Six daily newspapers from various parts of the country are received and about twenty-five weeklies from various counties of New Mexico are donated by their publishers.

The statistics for 1913 follow:

Volumes on hand, Jan. 1, 1913.....	15,386
Accessions by purchase.....	210
Accessions by binding.....	139
Accessions by gift	479
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Total accessions for 12 months.....	828
Withdrawals for past 12 months.....	18
Net gain for 12 months.....	810
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Total volumes in the library, December 31, 1913....	16,196
Total number pamphlets in library, December 31, 1913,	24,964

ORIGIN

The New Mexico College of Agriculture and Mechanic Arts is one of about fifty "land grant colleges" established in the several states of the Union in accordance with the provisions of an act of Congress approved July 2nd, 1862, commonly known as the Morrill Act. This historic measure marked the beginning of a new era in education. The purpose and scope of the institutions which were to be established under this act are set forth in the words of the act, which provides for a grant of land to each state for the establishment and maintenance of "at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." These colleges then were to offer both "liberal and practical education," both cultural and professional training, for the benefit of the industrial classes, the people who work.

On February 28, 1889, the 28th Legislative Assembly of New Mexico passed an act establishing the College and accepting for it the appropriations which had been made by Congress. The act further defined the character and purposes of the institution. It "shall be non-sectarian in character, devoted to practical instruction in agriculture, mechanic arts and natural sciences connected therewith, as well as a thorough course of instruction in all branches of learning bearing upon agricultural and industrial pursuits. The course of instruction of the college hereby created shall embrace the English language, literature, mathematics, philosophy, civil engineering, chemistry, animal and vegetable anatomy and physiology, the veterinary art, entomology, geology, political, rural and household economy, horticulture, moral philosophy, history, mechanics, and such other sciences and courses of instruction as shall be prescribed by the regents."

By its further act of February 26th, 1891, the legislature of New Mexico accepted the congressional appropriation of 1890 and accepted and consented to all the terms and conditions upon which it was made, including the principle that the Territory should make adequate provision for buildings, grounds, and general expenses of maintenance, while the funds received from the federal government are to be applied to the maintenance of the Experiment Station and to the cost of instruction and the facilities for instruction in certain specified branches.

In 1889 Las Cruces College was organized by Prof. Hiram Hadley. This furnished the nucleus of the College of Agriculture and Mechanic Arts which opened its doors for its first session on March 10, 1890, with Prof. Hadley as its first president.

THE AGRICULTURAL EXPERIMENT STATION

An act of Congress approved March 2nd, 1887, and known as the Hatch Act provided for the establishment and support of Agricultural Experiment Stations in connection with the various agricultural colleges "in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture and to promote scientific investigation and experiment respecting the principles and applications of agricultural science."

The bulletins which are published quarterly, or oftener, by the Experiment Station deal chiefly with agricultural problems, and are sent without charge to residents of New Mexico on request.

INCOME

The following funds constitute the income of the College.
FROM THE UNITED STATES GOVERNMENT:

Morrill Fund, \$50,000 a year. This is expended under the supervision of the United States Commissioner of Education, and is available only for instruction in Agriculture, the

Mechanic Arts, the English language, and the various branches of mathematical, physical, natural, and economic sciences, with special reference to their application in the industries of life, and to the facilities in such instruction.

Hatch Fund, \$15,000 a year, for the support of the Agricultural Experiment Station, "to pay the necessary expenses of conducting investigations and experiments, and printing and distributing the results."

Adams Fund, \$15,000 a year, for the Experiment Station for research work of distinct originality and scientific value. The Hatch and Adams funds are expended under the supervision of the Office of Experiment Stations of the United States Department of Agriculture.

The College will receive during the fiscal year of 1914-'15 the first annual appropriation of \$10,000 from the Lever Agricultural Extension Bill, which became a law during May, 1914. This fund, which will be expended entirely for extension and demonstration work, will be increased by Federal and State appropriations and should reach approximately \$64,000 in 1922.

FROM THE STATE:

The appropriation for the fiscal year beginning Dec. 1, 1913, is \$20,000.

In addition to the above sources of income, the College receives a few thousand dollars annually from the sale of farm products, tuition fees of non-resident students, etc., and about one thousand dollars as interest on permanent funds. The College has an endowment of 250,000 acres of land granted by Congress under the acts of 1898 and 1910, but at present derives no income from this source.

RELIGION

All students will be trained in the principles of morality, but no sectarian teaching will be tolerated in the College. Entire freedom of choice is given the student in selecting the church he will attend. Services are held at the following churches every Sunday: Catholic, Presbyterian, Methodist, Baptist, and Episcopalian. The Gibbons Club, composed of Catholic students, is under the direction of members of the faculty and has a regular class in religious instruction Sunday mornings under the priest of the Las Cruces parish. St. James Choir of the St. James Episcopal church in Mesilla Park is composed wholly of College students and numbers about forty young men. At the Presbyterian church are held meetings of the Young People's Society of Christian Endeavor. With the Methodist church is connected the Epworth League. The College Young Men's Christian Association conducts numerous Bible classes for students and holds regular meetings on Sunday afternoons and Tuesday evenings. The Young Women's Christian Association affords to the young women of the College opportunities for religious activities and development.

DISCIPLINE AND GOVERNMENT

By the creation of the College of Agriculture and Mechanic Arts there has been provided for the youth of New Mexico the fullest and best opportunities to secure a practical education. Students who enjoy the advantages here offered should realize that to forfeit these privileges on account of their misuse or abuse is a matter of the most serious concern. No elaborate code for the conduct of the student is prescribed. The College rules are mainly for the purpose of facilitating the College business. As regards behavior, students are expected to conduct themselves as ladies and gentlemen. If after a fair trial, the influence of any student is found to be detrimental to scholarship, morals, or good order, dismissal will follow. This is pre-eminently a place for serious and earnest students.

COURSES OF INSTRUCTION

The following outlines of courses are offered as suggestive of the general scope of the several lines of work and study open to election. It is not required that they be followed *in toto*, or in the exact order in which the several subjects are scheduled; but in order to graduate in any course, the student must have taken work amounting to eighteen credit hours each semester for four years, the last of which must have been spent in residence at this college.

The numbers preceding the several subjects refer to the description of the latter in the body of the catalogue. Numbers following the subjects indicate the time and credit allotted to each of them, laboratory periods being marked P, two of which count as one credit hour.

All male students except Juniors, Seniors, and Graduate students are required to take, additionally, four hours per week of Military Science and Tactics. Similarly, all young women except Juniors, Seniors and Graduate students are required to take four hours per week of Physical Education. All students are required to attend a General Assembly once a week.

Course in General Science

FRESHMAN

First Semester	Second Semester
241 English, 4	242 English, 4
281 Trigonometry, 4	282 College Algebra, 4
385 German, 4	386 German, 4
267 English History, 3	268 English History, 3
162 Gen. Chemistry, 2+4P	163 Gen. Chemistry, 2+6P

SOPHOMORE

387 German, 3	388 German, 3
164 Organ. Chemistry, 3+2P	115 Adv. Physiology, 4
143 Gen. Physics, 2+4P	144 Gen. Physics, 2+4P
389 French, 3	390 French, 3
Elective, 4	Elective, 4

JUNIOR

292 Economics, 4	293-4 Economics, 4
265 Europ. History, 4	266 Europ. History, 4
251 Debating, 2	252 Debating, 2
112 Adv. Zoology, 2+4P	119 Adv. Botany, 2+4P
Elective, 4	Elective, 4

SENIOR

131 Gen. Geology, 4	132 Hist. Geology, 4
369 Psychology, 4	287 Astronomy, 3
286 Astronomy, 2	Elective, 6
184 Mineralogy, 6P	Thesis, 5
Elective, 5	

College Course in Agriculture

FRESHMAN

First Semester

- 243 English, 2
- 162 General Chemistry, 2+4P
- 121 Agricultural Botany, 1+4P
- 35 Field Machinery, 1+4P
- 7 Elementary Agronomy, 2
- 47 Types of Live Stock, 3P
- 111 Economic Entomology, 2+2P

Second Semester

- 242 English, 4
- 163 General Chemistry, 2+6P
- 122 Agricultural Botany, 1+4P
- 8 Seeds, 3P
- 48 Poultry, 2+2P
- 89 Plant Propagation, 1+3P

SOPHOMORE

- 164 Organic Chemistry, 3+2P
- 352 Plane Surveying, 1+4P
- 92 Forestry, 1+2P
- 4 Grain Judging, 4P
- 72 Dairying, 2+4P
- 151 Meteorology, 1
- 5 Farm Management, 2

- 167 Agricultural Chemistry, 2+4P
- 15 Advanced Physiology, 4
- 10 Field Crops, 3+2P
- 93 Olericulture, 3
- 23 Origin of Soils, 1
- 49 Live Stock Management, 2+2P
- 11 Farm Management, 2

JUNIOR

- 292 Economics, 4
- 251 Debating, 2
- 22 Soil Physics and Tillage, 2+2P
- 94 Pomology, 2
- 112 Adv. Zoology, 2+4P
- 91 Landscape Gardening, 1+2P

- 293 Economics, 2
- 252 Debating, 2
- 33 Farm Motors, 3
- 95 Pomology, 2+2P
- 52 Stock Feeding, 3
- 50 Stock Judging, 2+3P
- 53 Animal Breeding, 2

SENIOR

- 132 General Geology, 4
- 97 Plant Breeding, 3
- 9 Experimental Agronomy, 4P
- 51 Stock Judging, 1+3P
- 126 Plant Pathology, 2
- 54 Horse Shoeing (1 Qr.) 3
- 55 Herd Books (2 Qr.) 2+2P
- 99 Viticulture, 2

- 363 Irrigation Practice, 2+2P
- 100 Theory of Pruning, 2
- 56 Veterinary Science, 3
- 73 Butter & Cheese Making, 2+4P
- Elective, 2
- Thesis, 5

Mechanical Engineering

FRESHMAN

First Semester

- 243 English, 2
- 281 Trigonometry, 4
- 385 German, 4
- 162 General Chemistry, 2+4P
- 301 Instrumental Drawing, 4P
- 318a Woodwork and Forging, 6P

Second Semester

- 244 English, 2
- 282 College Algebra, 4
- 386 German, 4
- 163 General Chemistry, 8P
- 202 Instrumental Drawing, 4P
- 318b Woodwork and Forging, 6P

SOPHOMORE

- 283 Analytic Geometry, 4
- 143 General Physics, 2+4P
- 352 Plane Surveying, 1+4P
- 285 Descriptive Geometry, 1+4P
- 322 Woodturning, 4P
- 303a Mechanical Drawing, 4P
- 387 German (Elective), 3

- 284 Calculus, 4
- 144 General Physics, 2+4P
- 307 Elements of Mechanics, 3
- 319 Pattern Mkg. & Foundry, 8P
- 303b Mechanical Drawing, 6P
- 388 German (Elective), 3

JUNIOR

- 292 Economics, 4
- 311 Applied Mechanics, 4
- 309 Graphic Statics, 3
- 172 Metallurgy, 4
- 320 Machine Shop, 8P

- 293 Economics, 3
- 312 Applied Mechanics, 3
- 356 Hydraulics, 3
- 308 Mechanism, 2
- 364 Highway Engineering, 3
- 304 Machine Design, 6P
- 321 Machine Shop, 6P

SENIOR

- 131 General Geology, 4
- 314 Thermodynamics, 5
- 345 Elem. Elect. Engineering, 4
- 336 Valve Gears, 2
- 316 Engin. Laboratory, 2P
- 305 Machine Design, 4P
- 327a Seminar, 1

- 287 Astronomy, 3
- 315 Engineering Struct., 2
- 325 Materials of Construction, 1+2P
- 313 Engineering Power Plants, 3
- 326 Gas and Oil Engines, 2
- 366 Contracts and Specifications, 1
- 317 Mech. Eng. Laboratory, 2P
- 327b Seminar, 1
- Thesis, 5

Civil Engineering

The first year is the same as in Mechanical Engineering.

SOPHOMORE

First Semester

- 283 Analytic Geometry, 4
- 143 General Physics, 2+4P
- 351 Plane Surveying, 2+6P
- 285 Descriptive Geometry, 1+4P
- 303a Mechanical Drawing, 4P
- 387 German (Elective), 3

Second Semester

- 284 Calculus, 4
- 144 General Physics, 2+4P
- 307 Elements of Mechanics, 3
- 353 Topographical Surveying, 2+6P
- 354 Topographical Draughting, 4P
- 388 German (Elective), 3

JUNIOR

- 92 Economics, 4
- 311 Applied Mechanics, 4
- 309 Graphic Statics, 3
- 355 Ry. & Canal Surveying, 3+4P
- 320 Machine Shop, 4P

- 293 Economics, 2
- 312 Applied Mechanics, 3
- 356 Hydraulics, 3
- 364 Highway Engineering, 3
- 362 Public Water Supply, 4P
- 365 Frame Structures, 2+4P
- 321 Machine Shop, 4P

SENIOR

- 131 General Geology, 4
- 345 Elem. Elect. Engin., 4
- 357 Bridge Design, 6P
- 359 Irrigation Engineering, 2
- 360 Irrigation Field Work, 6P
- 361 Sewage Disposal, 2
- 327a Seminar, 1

- 287 Astronomy, 3
- 315 Engineering Struct., 2
- 325 Materials of Construction, 1+2P
- 366 Contracts and Specifications, 1
- 317 Mech. Eng. Laboratory, 2P
- 358 Bridge Design, 6P
- 326 Gas and Oil Engines, 2
- 327b Seminar, 1
- Thesis, 5

Electrical Engineering

The first two years are the same as in Mechanical Engineering.

JUNIOR

First Semester	Second Semester
292 Economics, 4	293 Economics, 3
311 Applied Mechanics, 4	312 Applied Mechanics, 3
309 Graphic Statics, 3	356 Hydraulics, 3
172 Metallurgy, 4	308 Mechanism, 2
345 Elem. Elect. Engineering, 4	364 Highway Engineering, 3
320 Machine Shop, 2P	304 Machine Design, 6P
	321 Machine Shop, 6P

SENIOR

131 General Geology, 4	287 Astronomy, 3
314 Thermodynamics, 5	315 Engineering Struct., 2
316 Engin. Laboratory, 2P	325 Materials of Construction, 1+2P
346 Dynamo-Elec. Mach., 4	313 Engineering Power Plants, 3
348 Dynamo Design, 4P	366 Contracts and Specifications, 1
327a Seminar, 1	347 Alternating Currents, 2
	349 Elect. Power Transmission, 1
	350 Elect. Engin. Laboratory, 2P
	327b Seminar, 1
	Thesis, 4

Household Economics

FRESHMAN

First Semester

- 241 English, 4
 385 German, 4
 162 General Chemistry, 2+4P
 211 Domestic Art, 8P
 225 Foods, 3P

Second Semester

- 242 English, 4
 386 German, 4
 163 General Chemistry, 8P
 212 Domestic Art, 8P
 226 Foods, 3P

SOPHOMORE

- | | |
|-----------------------------------|--------------------------------|
| 387 German, 3 | 388 German, 3 |
| 164 Organic Chemistry, 2+4P | 115 Adv. Physiology, 4 |
| 214 Household Art, 1+4P | 120 Bacteriology, 2 |
| 213 Dressmaking & Tailoring, 1+4P | 219 Economic Use of Food, 2+6P |
| 377 Spanish (or Elective), 5 | 378 Spanish (or Elective), 5 |

JUNIOR

- | | |
|----------------------------|---------------------------|
| 292 Economics, 4 | 293 Economics, 4 |
| 265 European History, 4 | 266 European History, 4 |
| 251 Debating, 2 | 252 Debating, 2 |
| 112 Advanced Zoology, 2+4P | 119 Advanced Botany, 2+4P |
| 222 Home Nursing, 2 | 220 Dietetics, 2+4P |
| 218 Nutrition, 2 | |

SENIOR

- | | |
|-----------------------------|--------------------|
| 131 General Geology, 4 | 368 Pedagogy, 4 |
| 369 Psychology, 4 | 215 Millinery, 6P |
| 221 Invalid Cookery, 2+2P | 217 Textiles, 2+6P |
| 223 Sanitation & H. Mgt., 4 | Elective, 3 |
| Elective, 3 | Thesis, 5 |

College Preparatory Course

FIRST YEAR

First Semester

- 231 English, 5
 153 General Science, 3+3P
 271 Algebra, 5
 One Elective:
 A 371 Latin, 5
 B 329 Drawing and Manual
 Training, 3+6P

Second Semester

- 232 English, 5
 154 General Science, 3+3P
 272 Algebra, 5
 One Elective:
 A 372 Latin, 5
 B 330 Drawing and Manual
 Training, 3+6P

SECOND YEAR

- 233 English, 5
 261 General History, 5
 Two Electives:
 A 373 Latin, 5
 or 110 Zoology, 3+3P
 B 274 Plane Geometry, 5
 or 401 Com. Geography, 5

- 234 English, 5
 262 General History, 5
 Two Electives:
 A 374 Latin, 5
 or 117 Botany, 3+3P
 B 275 Plane Geometry, 5
 or 410 Com. Arithmetic, 5

THIRD YEAR

- 235 English, 5
 263 U. S. History, 5
 Two Electives:
 A 375 Latin, 5
 or 377 Spanish, 5
 B 276 Solid Geometry, 5
 or 161 El. Chemistry, 3+3P

- 236 English, 5
 264 U. S. Government, 5
 Two Electives:
 A 376 Latin, 5
 or 378 Spanish, 5
 B 277 Higher Arithmetic, 5
 or 110a Anat. & Physiology, 3+3P

FOURTH YEAR

- Three or Four Electives:
 A 237 English, 5
 B 278 Adv. Algebra, 5
 C 141 Elem. Physics, 3+3P
 or 291 El. Economics, 5
 D 383 Latin, 5
 or 379 Spanish, 5

- Three or Four Electives:
 A 238 English, 5
 B 279 Adv. Algebra, 5
 C 142 Elem. Physics, 3+3P
 or 407 Commercial Law, 5
 D 384 Latin, 5
 or 380 Spanish, 5

Irregular Courses

Students who have done the work of the first two years of the College Preparatory Course, and others of sufficient maturity of mind and purpose, may enter college classes as special students under the general regulations governing such students; but none will be graduated with the bachelor's degree without having met the requirements for college entrance. No restrictions will be placed upon election of work other than those resulting from relations of necessary sequence and the exigencies of the time schedule. This arrangement takes the place of the four year Industrial Courses which have hitherto been given.

The following outlines, under the old names of Industrial Courses, are suggested as embodying the main lines of work open for election by special students in accordance with this plan.

Industrial Course in Agriculture

The first two years are the same as in the College Preparatory Course.

THIRD YEAR

First Semester	Second Semester
235 English, 5	236 English, 5
263 U. S. History, 5	264 U. S. Government, 5
161 Elem. Chemistry, 3+3P	48 Poultry (or 93 Oleric.), 2+2P
4 Grain Judging, 4P	89 Plant Propagation, 1+3P
7 Elem. Agronomy, 2	8 Seeds, 3P
47 Types of Live Stock, 3P	23 Origin of Soils, 1

FOURTH YEAR

94 Pomology, 3	52 Stock Feeding, 3
97 Plant Breeding, 3	or 10 Field Crops, 3
126 Plant Pathology, 2	33 Farm Motors, 3
72 Dairying, 2+4P	56 Veterinary Science, 3
5 Farm Management, 2	11 Farm Management, 2
22 Soil Physics, 2+4P	49 Live Stock Management, 1+4P
	53 Animal Breeding, 2

Industrial Course in Mechanics

The first two years are the same as in the College Preparatory Course.

THIRD YEAR

First Semester	Second Semester
235 English, 5	236 English, 5
263 U. S. History, 5	264 U. S. Government, 5
301 Instrumental Drawing, 4P	302 Instrumental Drawing, 3P
322 Woodturning, 4P	319 Pattern Making, 5P
331a Carpentry, 10P	331b Carpentry, 10P

FOURTH YEAR

141 Elem. Physics, 3+3P	141 Elem. Physics, 3+3P
320 Machine Shop, 9P	321 Machine Shop, 9P
316 Engineering Laboratory, 2P	317 Engineering Laboratory, 2P
Elective, 8 or 10	Elective, 8 or 10

Industrial Course in Domestic Science

The first two years are the same as in the College Preparatory Course.

THIRD YEAR

235 English, 5	236 English, 5
263 U. S. History, 5	264 U. S. Government, 5
161 Elem. Chemistry, 3+3P	110a Anat. & Physiology, 3+3P
211 Domestic Art, 6P	212 Domestic Art, 6P
225 Foods, 3P	226 Foods, 3P

FOURTH YEAR

237 English, 5	238 English, 5
214 Household Art, 1+4P	120 Bacteriology, 2
213 Dressmaking & Tailoring, 1+4P	219 Economic Use of Food, 2+6P
222 Home Nursing, 2	215 Millinery, 6P
192 Adv. Cooking, 6P	Elective, 3
Elective, 3	

Industrial Course in Business

The first two years are the same as in the College Preparatory Course.

THIRD YEAR

First Semester

235 English, 5
263 U. S. History, 5
377 Spanish, or Elective, 5
391 Bookkeeping, 10P

Second Semester

236 English, 5
264 U. S. Government, 5
378 Spanish, or Elective, 5
392 Bookkeeping, 10P

FOURTH YEAR

379 Spanish, 5	380 Spanish, 5
or 291 Economics, 5	or 407 Commercial Law, 5
409 Business English, 5	409a Business English, 5
393 Adv. Accounting, 10P	394 Adv. Accounting, 10P
or 411 Stenography, 10P	or 412 Stenography, 10P
397 Typewriting, 10P	398 Typewriting, 10P

TRADES COURSES

In order to extend the advantages of the institution to those who have not had the opportunity of preparing themselves for the regular courses of the college, we have arranged and are offering the following Trades Courses.

Business Course**FIRST YEAR****First Semester**

- 410b Arithmetic, 5
 381a Bookkeeping, 15P
 231 English, 5
 391a Penmanship
 400 Spelling, 2

Second Semester

- 410a Industrial Arithmetic, 5
 392a Bookkeeping, 10P
 232 English, 5
 392a Penmanship
 401a Natural Geography, 5

SECOND YEAR

- 393a Accountancy, 10P
 401 Commercial Geography, 5
 409 Business English, 5
 397 Typewriting, 10P

- 394a Accountancy, 10P
 410 Commercial Arithmetic, 5
 409a Business English, 5
 407 Commercial Law, 5

or

- 393a Accountancy, 10P
 411 Stenography, 10
 409 Business English, 5
 413 Typewriting, 10P

- 394a Accountancy, 5
 412 Stenography, 10
 410 Commercial Arithmetic, 5
 409a Business English, 5
 413a Typewriting, 10P

Stenography

- 411 Stenography, 10
 413 Typewriting, 10P
 409 Business English, 5

- 412 Stenography, 10
 413a Typewriting, 10P
 409a Business English, 5

Advanced Stenography

- 415 Stenography, 10
 Typewriting, 10P
 Spanish or English

- 416 Stenography, 10
 Typewriting, 10P
 Spanish or English, 5

Spanish Stenography

- 417 Stenography, 10
 Typewriting, 10P
 Spanish, 5

- 417a Stenography, 10
 Typewriting, 10P
 Spanish, 5

One Year Practical Mechanics**FOR SPECIAL STUDENTS**

- 231 English, 5
 — Special Arithmetic, 4P
 — Shop Problems
 and Drawing, 5
 331a Carpentry, 6P
 301 Instrumental Drawing, 4P
 322 Woodturning, 4P

- 232 English, 5
 410a Industrial Arithmetic, 5
 — Shop Problems
 and Drawing, 5
 320a Machine Shop, 6P
 335 Engineering Laboratory, 4P

DIVISION OF AGRICULTURE

The following are the departments of instruction in the agricultural division:—

Department of Agronomy, including Soil Physics and Agricultural Engineering.

Department of Animal Husbandry, including Dairying.

Department of Horticulture.

The courses of instruction offered in this division are designed to combine, in the proper proportions, that amount of theoretical study with laboratory and field training which will produce a well rounded, practical, resourceful man. To this end the course is strong in botany and chemistry, which form important aids to applied agriculture, and a certain number of other subjects of general educational value are included. To all this is added a large amount of practical work under competent instruction and with a modern equipment. The instruction is given by text-books, lectures, laboratory practice, and field observation. These courses fit young men for the various agricultural pursuits; farming, stock-raising, dairying, fruit growing, market gardening, and the nursery business. It also prepares them for professional positions in agricultural colleges, for service in the United States Department of Agriculture, and for farm management and supervision. The demand for trained men in these latter positions has been so great that in recent years almost all agricultural graduates have been called into college or experiment station work.

DEPARTMENT OF AGRONOMY

PROFESSOR HUMBERT

MR. MCNEELY

ASSISTANT PROFESSOR CONWAY

MR. HARWELL

Agronomy is the science of the field and its crops. The object of the work is to acquaint the student with soils, crops, crop production, the improvement of soils, the preservation of fertility, and the application of economic business methods.

4. *Grain Judging.* A laboratory course in judging various crops with regard to market grades and to seed. The score card is used extensively. Assistant Professor Conway.

Required of Agricultural Sophomores, first semester, 4 hours practice.

5. *Farm Management.* The work of this course consists of a study of some of the problems confronting a farmer in the development and management of different classes of farms. It treats of the location and grouping of farm buildings; utilization of the different soils and exposures; rotation and maintenance of soil fertility; provision for the necessary livestock, which includes a proper division between tilled and untilled land, meadow, pasture, etc.; and the development of the landscape effects of the entire farm. It correlates the study of soil management, crop management and business management of the farm, including farm accounts. Professor Humbert.

Required of Agricultural Sophomores, first semester, 2 hours.

7. *Elementary Agronomy.* This course gives a general survey of the different branches of agriculture, including the principles of plant growth, and the relation of soils and moisture to crops. Professor Humbert.

Required of Agricultural Freshmen, first semester, 2 hours.

8. *Seeds.* In this course studies of the identification, adulteration, and germination of farm seeds are taken up. A systematic study of seeds of the more common weeds is made, so that adulterants may be recognized and classified. Methods of selection and preservation of seeds are studied, and methods of treating seeds for fungous and other enemies. Assistant Professor Conway.

Required of Agricultural Freshmen, second semester, 3 hours practice.

9. *Experimental Agronomy.* Special work for advanced students, conducted in the field and laboratory, the aim being to familiarize them with the theories of investigation as they apply to the farm and to Station work. Professor Humbert.

Required of Agricultural Seniors and graduate students in Agronomy, first semester, 4 hours practice.

10. *Field Crops.* This course includes a study of the various crops of the farm, their selection, adaptation, uses, planting, cultivation, storing, varieties and improvement, the effects of different crops upon the fertility of the soil and upon succeeding crops, different systems of rotation and the effects upon the productiveness of the soil produced by various methods of field management under New Mexico conditions. Hunt's Cereals of America, and Forage and Fiber Crops will be used as a text supplemented by lectures. Assistant Professor Conway.

Required of Agricultural Sophomores, second semester, 3 hours, plus 2 hours practice.

11. *Farm Management.* Continuation of Course 5. Professor Humbert.

Required of Agricultural Sophomores, second semester, 2 hours.

22. *Soil Physics and Tillage.* A study of the physical properties and tillage of soils, special attention being given to the relation of water to soils. Various laboratory and field experiments are conducted to show methods of cultivation for various soils. The lectures are on related subjects. The field and laboratory work includes the classification and analysis of field samples and various determinations of physical properties. Mr. McNeely.

Required of Agricultural Juniors, first semester, 2 hours plus 4 hours practice. Prerequisites, Courses 164 and 23.

23. *Origin of Soils.* This course deals with the various rocks and minerals from which soils are formed. Considerable attention is given to the agencies and processes by which the soils have been laid down. A brief outline of soil classification is given. Mr. McNeely.

Required of Agricultural Sophomores, second semester, 1 hour.

24. *Advanced Work in Soils.* The work of this course is a continuation of Course 22 and consists of special experimentation and lecture work on such subjects as fertilizers, inoculation, seepage and alkali studies. This course may be a major or minor subject for graduate work if desired. Professor Humbert and Mr. McNeely.

Elective, time to be arranged with head of department.

25. *Advanced Work in Crops.* Students desiring advanced work in crops may arrange for special laboratory and field work in *Plant Breeding, Tillage Methods, Rotation of Crops, Field Machinery, or Farm Management.* Professor Humbert and Mr. Harwell.

Agricultural Engineering

35 *Field Machinery.* This course is designed to familiarize students with the usual farm implements and machinery, particular stress being given to the types best suited to New Mexico conditions. The course will include studies of the construction and use of different forms of plows, haying machinery, windmills, pumps, wagons, drills, etc., their adaptation, and the conditions under which they can be used economically. Assistant Professor Conway.

Required of Agricultural Freshmen, first semester, 1 hour plus 4 hours practice.

33. *Farm Motors.* This course is given in the Mechanical Engineering department. It involves a thorough study of various types of internal combustion engines and their uses, horsepower calculations, and relative value. Class work is supplemented by practical work on engines used by the agricultural department and in the engineering laboratory

Required of Agricultural Juniors, second semester, 3 hours.

Equipment

The Department of Agronomy occupies space in the Agriculture Building for laboratories, lecture room, and offices, a soil physics laboratory in the Science Hall, and its proportionate part in the large experiment station corrals and a large adobe building for the storing of field crops, feeds, and light machinery. For the studies in soils, the department is well equipped with modern appliances for general and technical studies. For the studies in crops, the laboratories contain all the necessary permanent equipment, and each year new

supplies of cereals, grasses, and forage crops are grown on the College farm for the use of the classes, and fresh supplies of foreign seeds are obtained when needed. The classes in agricultural engineering have access to different types of almost every field machine used in this region. The department is also well supplied with all drawing materials necessary for the classes in farm buildings. The extensive experiments carried on by the department with crops and soils are continually used for demonstrating the different subjects to the classes, and the immediate vicinity affords ample facilities for studying soil formation, transportation, and farm management.

DEPARTMENT OF ANIMAL HUSBANDRY

PROFESSOR FOSTER

MR. CUNNINGHAM

MR. QUESENBERRY

Zootechny

In view of the fact that the livestock industry is the leading industry of New Mexico and that its further development has wonderful possibilities, a strong course in animal husbandry is given with special reference to state conditions. The subjects are pursued from a practical as well as a scientific standpoint, having in view the thorough equipment of young men for successful work in breeding, care, and management of large herds.

47. *Types of Livestock.* This is a practical course in the study of animal type, form, and quality, and their relation to the utility of the animals, suitability for breeding and market demands. The score card is used until the student gets thoroughly familiar with the desired conformation, when classes are made up for comparative judging. The first semester is devoted to a study of beef cattle, dairy cattle, sheep and goats. Mr. Quesenberry.

Required of Agricultural Freshmen, first semester, 3 hours practice.

48. *Poultry.* Includes a study of the history and characteristics of all the leading breeds, and their adaptabilities to New Mexico conditions. The feed, care, and management of fowls for eggs and market, principles of breeding, caponizing, and marketing of poultry and eggs, planning and ar-

ranging poultry houses, diseases and parasites and their treatment, and artificial incubation and brooding are treated in this course. Mr. Quesenberry.

Required of Agricultural Freshmen, second semester, 2 hours plus 2 hours practice.

49. *Practice in Livestock Management.* This course is intended largely to prepare the students in the practical application of the many things that are necessary in the successful management of livestock. It consists of demonstrations and actual work, in handling the various kinds of livestock, such as dehorning cattle, dipping stock, castrating animals, restraining animals for various operations and other purposes, fitting animals for sale and show, trimming feet, shearing sheep, fitting harnesses and hitching horses, training and breaking colts, and the use of various convenient appliances useful in handling stock. The student will thus be better prepared to take charge of stock farms and direct and perform the actual operations necessary for conducting the business. Mr. Quesenberry.

Required of Agricultural Sophomores, second semester, 1 hour plus 4 hours practice.

50. *Stock Judging.* Students are drilled in the comparison of animals, and their utility and adaptability to different conditions. The practical work of judging is supplemented by text book and lecture work on the history, development, characteristics, and suitability of horses, cattle, sheep and swine for various purposes. The student is familiarized with the excellencies and deficiencies of the different breeds especially those best adapted to New Mexico conditions. Professor Foster and Mr. Cunningham.

Required of Agricultural Juniors, second semester, 2 hours plus 3 hours practice.

51. *Stock Judging.* A continuation of the preceding course. Professor Foster and Mr. Cunningham.

Required of Agricultural Seniors, first semester, 1 hour plus 3 hours practice.

52. *Stock Feeding.* A study is made of the digestive system, principles of nutrition, and the composition of different feed stuffs, with a comparison of their relative values in feeding different kinds of stock, obtained from a study of the experiments conducted at the different stations. Special emphasis is put upon the compounding of rations from feeds available to New Mexico farmers and the profitable feeding of stock under New Mexico conditions. Professor Foster.

Required of Agricultural Juniors, second semester, 3 hours.

53. *Animal Breeding.* This course covers the laws governing the breeding of animals, and includes study of breed formation, principles of heredity, laws of correlation, variation, fecundity, atavism, in-and-in breeding, parentage, form types, and pedigrees. Attention is given to the selection of such animals as would aid in the improvement of New Mexico stock. Professor Foster.

Required of Agricultural Seniors, second semester, 2 hours.

54. *Horseshoeing.* This course treats of the right and wrong conformation of legs and feet of the horse, with their effect upon the direction of action; the structure of the hoof, and the methods of shoeing normal and diseased feet; and the ways by which faulty conformation may be corrected. A few lectures will also be given on the conformation and soundness of horses, and their effects upon the usefulness of the animals. A study of the vices and faults, and means

used by unscrupulous horsemen in hiding them on sale animals. Mr. Quesenberry.

Required of Agricultural Seniors, first semester, 3 hours for the first quarter.

55. *Herd Books and Pedigrees.* The time in this is given over to a study of the pedigrees and their importance in selecting and breeding stock. It affords a training in the intelligent use of the various herd books and a study of the prominent families and tribes, and the influence of using their blood for breeding. Mr. Cunningham.

Required of Agricultural Seniors, first semester, 2 hours plus 2 hours practice, second quarter.

56. *Veterinary Science.* This course consists of a study of animal anatomy and pathology. The work in anatomy familiarizes the student with the structure of farm animals, so that he can more intelligently select, feed, and care for his stock. The work in pathology includes the causes, prevention, diagnosis and treatment of the more common diseases met with among farm animals. It gives the student a general knowledge of some of the most dangerous and common contagious and infectious diseases, with methods of eradicating them from the country. Mr. Cunningham.

Required of Agricultural Seniors, second semester, 3 hours.

72. *Dairying.* This course comprises a study of the properties of milk and its products. A thorough discussion of the following subjects is taken up in the class room and laboratory: sanitary conditions in the milking house, care of milk, creaming, separating, testing, Pasteurizing, churning, and marketing products. It also includes a study of the secretion, composition, food value, care, changes and adulteration

of milk. A thorough study is made of hand separators, Pasteurizers, churns, and other equipment. Mr. Cunningham.

Required of Agricultural Sophomores, first semester, 2 hours plus 4 hours practice.

73. *Butter and Cheese Making.* Here a course is offered to prepare the student for work in creameries and cheese factories. The first part of the course is given to a study of the handling of milk and cream, Pasteurization, the use of starters, the effect of different degrees of acidity on the quality of butter; the principles of churning, packing and marketing of butter. Instruction and investigation work is given in the method of organizing, equipping, and managing creameries.

The latter part of the course will be devoted to cheese making. A study will be made of cheese making under farm conditions, the importance of quality and composition of milk, the ripening and setting of milk, the cutting, cooking, and dipping, of the curd; and the milling, salting and pressing, of the curd and the curing and marketing of cheese. Mr. Cunningham.

Elective for Juniors and Seniors, second semester, 2 hours plus 3 hours practice.

Equipment

Livestock. The equipment in livestock is very good. Various breeds of cattle are represented in the College herd by both males and females of the standard dairy and beef breeds: Jerseys, Guernseys, Holsteins, Herefords, Short-horns and Aberdeen-Angus. Very good types of Rambouillet and Shropshire sheep are kept for instruction, as well as some very fine specimens of Tamworth, Yorkshire, and Duroc-Jersey swine. All of the pure bred stock have either been selected from show stock or are descendents from prize-winning stock at the leading livestock shows. The poultry section consists of about two acres divided into eight pens, each containing its individual house. White Wyandottes, White Plymouth Rocks, Light Brahmas, Brown Leghorns, and Buff Orpingtons are at present being bred on the farm. A feed house, brooder house, and an incubator cellar furnishes quarters for various makes of incubators, brooders, bone cutters, dry feed hoppers, and other equipment.

Dairy Laboratory. Two large rooms on the lower floor of Wilson Hall are equipped for the dairy laboratory. Twelve hand separators representing the latest models of standard machines are available for use by the students. The power is obtained from a steam engine and a boiler, which also supplies steam for heating water and sterilizing the utensils. The other equipment consists of a power churn, hand churn, Babcock testers, both steam and hand; butter worker and printers; tables; cases; washing sinks; and a general assortment of apparatus for acid tests, moisture tests and the various kinds of dairy work. Besides this a small dairy is kept up at the farm where the milk from the College herd of 20 cows is cared for. All of the milk is separated and the cream churned in the dairy, and a supply of milk and cream is always available for use in the laboratories.

DEPARTMENT OF HORTICULTURE

PROFESSOR GARCIA

ASSISTANT PROFESSOR RIGNEY

The endeavor in teaching this subject is to train young men for successful work in horticultural pursuits, such as fruit growing, nursery business, and market gardening, and to fill positions as fruit farm managers, experiment station workers, and teachers of horticulture. This instruction is given by text books and lectures, supplemented by outside reading, laboratory practice, and field observations.

89. *Plant Propagation.* The work is introductory in nature in regard to the general methods of propagating, such as seedage, cutting, layerage, etc., but more complete instruction in the methods of propagating the common fruits is given. In the practice work the commercial methods of budding and grafting are emphasized. Assistant Professor Rigney.

Required of Agricultural Freshmen, second semester, 1 hour plus 4 hours practice.

91. *Landscape Gardening.* A study of systems of landscape gardening, comprising such subject matter as laying out and planting residence grounds; location and setting of houses and other buildings; avenues, drives, walks; ornamental trees, shrubs, and flowers adapted to planting in New Mexico; lawns, beds and borders; and the general principles involved in the arrangement and planting of home grounds and farms for beauty, comfort and utility. Professor Garcia.

Required of Agricultural Juniors, first semester, 1 hour plus 2 hours practice.

92. *Forestry*. This course includes the study of wind-breaks, utility of forest plantations, and the general influence of forests on the climate and water courses. Forest and street tree planting also receives attention. Assistant Professor Rigney.

Required of Agricultural Sophomores, first semester, 1 hour plus 2 hours practice.

93. *Olericulture*. The theory of vegetable growing, with studies of special groups and varieties of garden vegetables, is taken up, as well as their variations and adaptations to special purposes and conditions. Assistant Professor Rigney.

Required of Agricultural Sophomores, second semester, 2 hours plus 2 hours practice.

94. *Pomology*. This work takes up a discussion of the principal types and varieties of cultivated fruits and their related forms, together with a consideration of their variations, modifications and adaptations under culture. The judging, grading, packing and canning of fruit will receive special attention. The practice work in canning fruit and vegetables will be done on Saturday forenoons during September and part of October. The work in canning is open to any student who may wish to take it. Professor Garcia.

Required of Agricultural Juniors, first semester, 3 hours.

95. *Pomology*. This is a continuation of Course 94, and includes a phenological study of the more important varieties of our orchard fruits. Professor Garcia.

Required of Agricultural Juniors, second semester, 2 hours plus 2 hours practice.

97. *Plant Breeding.* The student having completed his biological studies is prepared for a discussion of plant breeding and the evolution of cultivated plants. Selection, crossing, variation, mutation, and the influence of environment, food, etc., are investigated. Professor Garcia.

Required of Agricultural Seniors, first semester, 3 hours.

99. *Viticulture, Small Fruits, and Nut Culture.* A study of the cultivation of the grape, small fruits, and the different nut-bearing trees. Assistant Professor Rigney.

Required of Agricultural Seniors, first semester, 2 hours.

100. *Theory of Pruning.* The philosophy of pruning, the reasons why no two fruit or even trees can be pruned just alike, the fruit spurs and buds are discussed in this course. Professor Garcia.

Required of Agricultural Seniors, second semester, 2 hours.

Graduate Work in Horticulture

Advanced work in the department is offered to students who are qualified and wish to specialize in horticulture. Special opportunities are offered for the study of problems bearing upon pomology, olericulture, and forestry. Some of the lines along which the student may work are:

Pomology. The orchards and vineyards of the department, containing a large number of varieties, furnish abundant material to the student who wishes to make a comparative study of varieties as well as of their adaptability to this climate.

Olericulture. Most of the time in this course will be devoted to problems relating to economic production of vegetables and marketing through various organizations. In addi-

tion to this, special study will be made of variations and their adaptations to various climates and conditions.

Forestry. A study of forest economics, history of forestry, the relation of the forests directly and indirectly to the public welfare, forest administration, study of the factors influencing prices of lumber and forest products.

Landscape Gardening. Most of the time in this course will be devoted to the laying out of large public grounds and parks. Special attention will be given to the adaptability of ornamental plants to this climate.

Equipment

This department has an excellent horticultural library, a number of different styles of orchard and garden cultivators, a good supply of the different kinds of pruning knives, shears, and saws, as well as garden trowels and dibbers, five kinds of sprayers, and a fair collection of fruits preserved in formalin. The department has a 23-acre farm, where all the investigational work is conducted.

The experimental orchards and vineyards contain many varieties of fruit trees and vines. Apple, peach and pear orchard and a plantation of strawberries and other small fruits have been planted, as well as a vineyard to study the varieties of the *Vitis vinifera* grape and its resistance to the crown-gall. The vegetable gardens, greenhouse and cold frames afford excellent opportunity for study and experiment. The arboretum, forestry plantations, and lawns give enlarged facilities for observation and study.

The students are also given an opportunity to visit the commercial orchards, vineyards, and truck gardens of the neighborhood for study and observation.

The department occupies part of the second floor of the Wilson Hall, where it has an office, a class room, and a large laboratory.

DEPARTMENT OF BIOLOGY

PROFESSOR

ASSISTANT PROFESSOR MERRILL

PRESIDENT LADD

The work required in the Preparatory and Industrial courses in Zoology and Botany is elementary and general in character, and designed to present the general principles of each subject and to introduce the student to a limited number of types of the larger classes of animals and plants.

The College courses go farther into the subjects and require a greater amount of laboratory work. Elective courses are offered by the department in both Zoology and Botany, the particular branch of the subject being largely at the option of the student. All students electing work must have completed courses number 111, 112, 119 or 121 and 122, or their equivalents. All electives will be accepted as minors for graduate work. For credit in major graduate work a student must do not less than ten hours a week throughout one year.

Zoology

110. *General Zoology*. A course introductory to general biological principles. Includes recitations, observation of animal life in the field, and the study of laboratory material illustrative of elementary morphology. Text-book Linville and Kelly's Text-book in General Zoology. Assistant Professor Merrill.

Elective for Second Year Preparatory and Industrial Course students, first semester, 3 hours recitation and 3 hours practice.

111. *Economic Entomology*. This course is designed to give a working knowledge of the principal groups of insects as to structure, habits, and economic aspects. Emphasis is placed upon species affecting crops in New Mexico. Text-book Smith's *Economic Entomology*. Assistant Professor Merrill.

Required of Agricultural Freshmen, first semester, 2 hours plus 2 hours practice.

112. *Advanced Zoology*. Lecture, text and laboratory work giving deeper consideration of the problems, relations and forms of animal life. Text-book Osborn's *Economic Zoology*. Assistant Professor Merrill.

Required of all Juniors except Engineers, first semester, 2 hours plus 4 hours practice.

113, 114. *Ornithology*. A general course on habits, distribution, economic importance and taxonomy of the South-western birds. Bailey's *Handbook of the Birds of South-western United States* is used for identification work. Assistant Professor Merrill.

Elective for students who have had at least an elementary course in Zoology, throughout the year. Hours to be arranged.

115. *Advanced Physiology*. Lectures and recitations concerning anatomy, histology, physiology and hygiene of the human body, supplemented by casts, microscopic sections and demonstration material and exercises. A course in general human anatomy and physiology is prerequisite. Text-book Martin's *Human Body*. Assistant Professor Merrill.

Required of Sophomores in the General Science, Household Economics and Agricultural Course, second semester, 4 hours.

116. *Systematic Zoology*. An advanced course giving opportunity for further studies in the local fauna or some definite group of animals. Assistant Professor Merrill.

Elective for students who have taken Courses 111 or 112.
Hours to be arranged.

Botany

117. *General Botany*. This course treats of the general morphology, physiology and ecology of the flowering plants. Some attention is given to the commoner cryptogams. Text-book Bergen and Caldwell's Practical Botany.

Elective for Second Year College Preparatory and Industrial students, second semester, 3 hours recitation and 3 hours practice.

119. *Advanced Botany*. This course treats of plant structure and functions from the standpoint of evolution. Part of the laboratory time is given to micro-technique. Text-book Bergen and Davis's Principles of Botany.

Required of General Science and Household Economics Juniors, second semester, 2 hours plus 4 hours practice.

120. *Bacteriology*. Lectures and demonstration work on bacteria of water, air, soils and foods. Especial emphasis is given of the relation of bacteria to wounds, disease and sanitation.

Required of Household Economics Sophomores, second semester, 2 hours.

121,122. *Agricultural Botany*. This course is adapted to the general botanical needs of the students of the Agricultural Courses. The following subjects are treated in the

course: general morphology and histology of spermatophytes; plant physiology; taxonomy of the commoner cultivated plants; fungus and bacterial diseases and their treatment.

Required of Freshmen Agricultural students, 1 hour lecture and 4 hours practice throughout the year.

126. *Plant Pathology.* An advanced course dealing with the more important diseases of cultivated plants, their morphological and physiological characters, together with methods of treatment and prevention of the diseases.

Required of Agricultural Seniors, elective for others, first semester, 2 hours.

127. *Plant Histology.* A study of plant tissues with special reference to the structure and uses of different parts of the plant body.

Elective for students who have completed Courses 117, 119 or 121, and 122. Hours to be arranged.

128. *Plant Physiology.* This course considers the physiological processes of the plant by the laboratory method and includes the reading of some of the best reference texts on the subject.

Elective for students who have completed Courses 117, 119 or 121, and 122; 10 hours practice throughout the year.

129. *The Plant Families.* A general course on the morphology and taxonomy of the spermatophyte families as set forth in the latest texts with examination of representative material from the herbarium.

Elective for students who have completed Courses 117, 119 or 121, and 122. Hours to be arranged.

130. *Taxonomic Research.* The revision of any good sized genus or small family of plants of which there is representative material in herbarium, or an examination of the flora of any given restricted region, with a consideration of the factors governing the distribution of the plants of such a region.

Open to all who have completed Courses 117, 119 or 121, and 122. Hours to be arranged.

Geology

The work in Geology is taught by lectures and recitations with prescribed text-book reading. Occasional field work is arranged for as often as circumstances will permit.

131. *General Geology.* This course includes dynamical, structural and physiographic geology, considerable stress being laid upon rocks, rock-making minerals and their derivative soils. The required field trip will cost each student \$7.50. President Ladd.

Required of all Seniors, first semester, 4 hours.

132. *Historical Geology.* A detailed treatment of the history of the earth, together with some elementary work in paleontology. President Ladd.

Required of Seniors in General Science, second semester, 4 hours.

Equipment

This department occupies four rooms on the upper floor of Science Hall. One room is used as a general laboratory for the Zoological, Botanical and Physiological courses. It is equipped with gas, water, tables, and a general assortment of apparatus, glass-ware and reagents of various kinds for general Biological and Physiological work. A small greenhouse in connection with the laboratory gives a few facilities for work in plant Physiology.

A second room is used for the Herbarium. In it are upwards of 35,000 sheets of specimens representing approximately ninety per cent of the flora of New Mexico.

A third room contains the Entomological and Ornithological collections, the United States Geological Survey collection of rocks, several hundred fossils and casts, besides maps, charts and common minerals which are used in the geological courses.

The fourth room is used as an office for the department and contains the departmental library of some five hundred volumes besides numerous bulletins and pamphlets.

DEPARTMENT OF PHYSICS

PROFESSOR STOCKTON

The courses in this department give a general survey of the subject, and furnish a foundation for a practical application in engineering, chemistry and agriculture.

The method of instruction is by lectures, recitations, and laboratory exercises. Careful attention is paid to the solution of problems that accompany each course.

141. *Elementary Physics*. Introductory principles of Mechanics and Heat as outlined in Millikan and Gale's First Course in Physics. A list of laboratory experiments, correlated with the text, is completed by each student taking the work. Professor Stockton.

Required of all Fourth Year students in the Industrial Course in Mechanics, and elective in the General Preparatory, first semester, 3 hours recitation and 3 hours laboratory.

142. *Elementary Physics*. Electricity, Sound and Light. Continuation of Course 141. Professor Stockton.

Required of all Fourth Year Industrial Mechanical students, and elective in the General Preparatory, second semester, 3 hours plus 3 hours laboratory.

143. *General Physics*. This course is a more technical treatment of the subject with special reference to problems met later in engineering and other sciences. Text-book, Spinney's "Text-book of Physics," with Millikan's Mechanics and Heat as a laboratory guide. The Mechanics of Solids and Fluids and Heat. Prerequisites, Trigonometry and 141 and

142, or an equivalent High School course with certified note book of laboratory experiments. Professor Stockton.

Required of Sophomores in Engineering and General Science Courses, first semester, 2 hours plus 4 hours laboratory.

144. *General Physics*. Electricity, Sound and Light. A continuation of Course 143 but with Millikan and Mills' "Electricity, Sound and Light," used in the laboratory. Professor Stockton.

Required of Sophomores in Engineering and General Science Courses, second semester, 2 hours plus 4 hours practice.

145. *Physical Measurement*. Experimental work in mechanics requiring quantitative results. The course is varied by means of alternative experiments to suit the needs of the students in the different courses. Professor Stockton.

Elective to Engineers and others completing Courses 143 and 144, first semester, 1 hour plus 4 hours laboratory.

146. *Physical Measurement*. A continuation of Course 145, applying the principles there developed to the measurement of magnetic field, electric current resistance, power, capacity and inductance. Professor Stockton.

Elective as above, second semester, 1 hour plus 4 hours laboratory.

151. *Meteorology*. A brief study of the climatology of the United States, with special reference to the arid area, also a discussion of the common meteorological instruments, their construction and use. Text, "Descriptive Meteorology," Moore. Professor Stockton.

Required of Agricultural Sophomores, 1 hour per week, first semester.

153. *Physiography*. This course is intended to lay a foundation for the student's scientific training by considering the physical agencies at work on the earth. An important part of the course is observing the effect of soil, topography, and climate on the distribution of plants and animals, and their relation to human industries. One double period per week is given to laboratory work or to field excursions. Professor Stockton.

Required of all First Year students in Preparatory and Industrial Courses, first semester, 3 hours recitation and 3 hours practice.

154. *Physiography*. Continuation of Course 153. An extended excursion to the river and the lava beds required. Professor Stockton.

Required of all First Year students in the Preparatory and Industrial Courses, second semester, 3 hours recitation and 2 hours practice.

Equipment

The department occupies a lecture room, office and laboratory on the first floor of the new engineering building. With this arrangement the attention of the students is immediately directed from the theoretical study to the practical application in the department of engineering.

The laboratories are fully equipped with apparatus for experiments indicated in the various courses and in addition there is material for advanced work for those who elect it.

The students in Meteorology will find a complete set of self-recording instruments as found in Weather Bureau stations and a library of crop and climate data of the United States.

DEPARTMENT OF CHEMISTRY

PROFESSOR HARE

Students desiring to pursue a four-year course in chemistry at this institution may do so by registering in the General Science course and choosing their electives in the Sophomore, Junior and Senior years from the courses in chemistry which are listed below. Instruction is given by means of lectures accompanied by demonstration experiments, recitations, and laboratory practice. During the third year of the Industrial courses in Agriculture and Household Economics, and the Freshman year for all college courses, laboratory practice consists of a study of the properties of the elements, demonstrations by actual experiment of the fundamental chemical laws, detection and preparation of simple substances and the separation of inorganic compounds. This laboratory work is followed in the Sophomore, Junior and Senior years by the quantitative analysis of salts, minerals, soils, fertilizers, waters, foods, feeding stuffs, insecticides, fungicides, and various agricultural products.

The instruction in advanced chemistry relates to the manufacturing industries, physiological chemistry, soils and fertilizers, and the chemistry of plant and animal life.

A year's course is offered to those who wish to become practical assayers. Those students taking this work must also take the courses offered in General Chemistry, Mineralogy, and Geology.

161. *Elementary Chemistry.* This is a brief outline of the fundamental laws and theories of chemistry, which is intended as an aid to a better understanding of certain subjects which are taught in the Industrial courses in Domestic

Science and Agriculture. McPherson and Henderson's Elementary Study and Exercises in Chemistry. Professor Hare.

Required of Third Year Industrial students in Agriculture and Domestic Science, first semester, 2 hours plus 4 hours practice.

162. *General Chemistry*. A study of the principles of chemistry as given in McPherson and Henderson's Study and Exercises in Chemistry. Professor Hare.

Required of Freshmen in all college courses, first semester, 2 hours plus 4 hours practice.

163. *General Chemistry and Qualitative Analysis*. This course is in part a continuation of the previous semester's work in general chemistry, and in addition a course in qualitative analysis is included that consists principally of laboratory experiments in qualitative analysis. Must be preceded by Course 162. Professor Hare.

Required of Freshmen in all college courses, second semester, 2 hours plus 6 hours practice.

164. *Organic Chemistry*. A study of the hydrocarbons and their derivatives as outlined in Remsen's Organic Chemistry. Must be preceded by Course 163. Professor Hare.

Required of Sophomores in General Science and Household Economics Courses. first semester, 3 hours plus 2 hours practice.

165. *Quantitative Analysis*. Mostly laboratory work. Evans' Quantitative Chemical Analysis and other suitable texts are used. Must be preceded by Course 163. Professor Hare.

Required of all General Science Course students whose major is chemistry, first semester, 10 hours practice.

167. *Agricultural Chemistry*. Ingle's Manual of Agricultural Chemistry. Mostly laboratory work in which the A. O. A. C. methods of the United States Department of Agriculture, Lincoln & Walton's Agricultural Chemical Analysis, and such other texts as are best suited to agricultural analysis, are used. Must be preceded by Course 164. Professor Hare.

Required of all Sophomore Agricultural students, second semester, 2 hours plus 4 hours practice.

168. *Industrial Analysis*. The analysis of various substances such as fuels, minerals, metals, alloys, cements, clays, paints, oils, etc., is included under this heading. Must be preceded by Course 165.

Elective for Juniors and Seniors in General Science Course with major in Chemistry, first semester, 10 hours practice.

169. *Industrial Analysis*. A continuation of Course 168. Must be preceded by Course 168.

Elective for Juniors and Seniors in General Science Course with major in Chemistry, second semester, 10 hours practice.

170. *Assaying and Metallurgical Analysts*. For the accommodation of those students in the General Science course who desire to elect the subject of assaying, a course in dry assaying of gold, silver and lead ores is offered. During this semester some work is also begun in the wet assay of the commoner metals. Furman's Manual of Assaying and Low's Technical Methods of Ore Analysis are used as texts. Must be preceded or accompanied by Course 163. Professor Hare.

Elective for Juniors and Seniors in General Science Course with major in Chemistry, first semester, 10 hours practice.

171. *Assaying and Metallurgical Analysis.* Continuation of Course 170, including a study of the methods of analysis of the metals. Must be preceded or accompanied by Course 170. Professor Hare.

Elective for Juniors and Seniors in General Science Course with major in Chemistry, second semester, 10 hours practice.

172. *Metallurgy.* This is a one semester course in the elementary metallurgy of the useful metals.

Required of Junior Mechanical and Electrical Engineers, first semester, 3 hours.

173. *Advanced Agricultural Chemistry.* This is a continuation of Course 167, and consists of the analysis of soils, waters, feeding stuffs, fertilizers, and various animal and vegetable products. It is intended as an elective for those who wish to fit themselves as agricultural analytical chemists. Must be preceded by Course 167. Professor Hare.

Elective for Juniors and Seniors in General Science Course with major in Chemistry, first semester, 10 hours practice.

174. *Food Analysis.* This is a course to fit the student for the position of food analyst. It is principally laboratory work in testing the composition of food and its adulteration. It should be preceded or accompanied by a course in microscopy and bacteriology. Leach's Food Inspection and Analysis, Publications of the Bureau of Chemistry, United States Department of Agriculture. Must be preceded by Course 164. Professor Hare.

Elective for Juniors and Seniors, first semester, 10 hours practice.

175. *Advanced Organic Chemistry*. A continuation of Course 164, including ultimate analysis. Professor Hare.

Elective for all students who have finished Course 164, second semester, 2 hours plus 6 hours practice.

176. *Physiological Chemistry*. This consists of a course in the chemistry of the physiological processes in plants and animals. Professor Hare.

Elective for Seniors in General Science Course with major in Chemistry, first semester, 3 hours plus 4 hours practice.

179. *Industrial Chemistry*. This is a study of the chemical principles involved in the various methods for the manufacture of acids, alkalies, glass, cements, alcohol, vinegar, and in the practices followed in similar industries. Professor Hare.

Elective for Seniors in General Science Course with major in Chemistry, first semester, 3 hours recitation and lecture.

180. *Industrial Chemistry*. A continuation of Course 179. Professor Hare.

Elective for Seniors in the General Science Course, with major in Chemistry, second semester, 2 hours recitation and lecture.

181. *Physiological Chemistry*. A continuation of Course 176. Professor Hare.

Elective for Seniors in the General Science Course with major in Chemistry, second semester, 4 hours practice.

182. *Research.* This is a laboratory course for the first semester of the Senior year which permits the student to begin the analytical work of his thesis at an earlier date than the first of the second semester. Professor Hare.

Elective for General Science Course Seniors with major in Chemistry, first semester, 4 hours practice.

183. *Research.* A continuation of Course 182, intended to be used to supplement the time allowed for thesis.

Elective for all Seniors in General Science Course with major in Chemistry, second semester, 10 hours practice.

184. *Mineralogy.* This course is principally determinative mineralogy, but crystallography and descriptive mineralogy are also briefly studied. Professor Hare.

Required of Seniors in General Science Course, first semester, 6 hours practice.

Thesis. Some original line of investigation should be taken up in the thesis course, and when possible it should be preceded by Course 182 and accompanied by Course 183, in order that all the time possible may be devoted to the work.

Required of all Seniors in General Science Course with major in Chemistry, second semester, 10 hours practice.

Not all elective courses 168-183 will be offered in any one year.

DEPARTMENT OF HOUSEHOLD ECONOMICS

PROFESSOR MILLER

The purpose of this course is to interest young women in the life and well-being of the home by teaching subjects of practical value to the household. And it is the aim throughout the course not only to dignify the work of the home, but to develop neatness and economy in the handling of materials and utensils.

Courses

211. *Domestic Art.* This course includes the making of articles showing the various stitches used in hand and machine sewing. Two pieces of underwear are also made.

Required of Household Economics Freshmen, first semester, 8 hours practice, and of Third Year Industrial students, 6 hours practice.

212. *Domestic Art.* This is a continuation of 211. A complete suit of underwear is finished and the remaining time is given to the making of unlined dresses. Prerequisite Course 211.

Required of Household Economics Freshmen, second semester, 8 hours practice, and of Third Year Industrial students, 6 hours practice.

213. *Dressmaking and Tailoring.* Instruction is given in the principles of garment making, taking measurements, cutting and fitting. This course includes the making of a tailored dress. Prerequisite Courses 211, 212.

Required of Household Economics Sophomores and Fourth Year Industrial students, 1 hour plus 4 hours practice.

214. *Household Art.* Materials suitable for various uses in the home are considered. Embroidery and stencils are used as means of ornament. Prerequisite Course 211.

Required of Household Economics Sophomores and Fourth Year Industrial students, first semester, 1 hour plus 4 hours practice.

215. *Millinery.* The practical construction of hats of typical kinds and their trimmings for all seasons.

Required of Household Economics Seniors and Fourth Year Industrial students, second semester, 6 hours practice.

216. *Embroidery.* An elective course in simple embroidery. Prerequisite Course 197 or 211.

First semester, 5 hours practice.

217. *Textiles.* This course covers the study of textiles, their history and manufacture. The laboratory work includes the dyeing and cleansing of fabrics.

Required of Household Economics Seniors, second semester, 2 hours plus 2 hours practice.

218. *Nutrition.* Foods are considered as to chemical composition and physiological properties and their relative values as nutritive agents. Prerequisite Courses 219, 225, 226. Professor Miller.

Required of Juniors in Household Economics Course, first semester, 2 hours.

219. *Economic Uses of Foods.* This course applies particularly to the study of manufactured products and the relative cost of food. The practice work includes the prepara-

tion of more complicated dishes and the serving of simple breakfasts and luncheons. Prerequisite Courses 225, 226. Professor Miller.

Required of Sophomores in Household Economics Course and Fourth Year Industrial students, second semester, 2 hours plus 6 hours practice.

220. *Dietetics*. This course includes a study of dietetic values of food, hygienic combinations and the planning of balanced dietaries. The practice work consists of the cooking of more elaborate dishes and the serving of dinners and teas. Prerequisite Courses 218, 219, 225, 226. Professor Miller.

Required of Juniors in Household Economics Course, second semester, 2 hours plus 4 hours practice.

221. *Invalid Cookery*. This course includes the preparation of food suitable for the patient and the relation of certain foods to particular diseases. Attention will be given to diets for growing children and the proper feeding of infants. Prerequisite Courses 218, 219, 220, 225, 226. Professor Miller.

Required of Seniors in Household Economics Course, first semester, 2 hours plus 2 hours practice.

222. *Home Nursing*. This course includes lessons on the furnishing, warming and ventilating of the sick room and administering to the patient. Professor Miller.

Required of Juniors in Household Economics Course and Fourth Year Industrial students, first semester, 2 hours.

223. *Sanitation and Home Architecture*. This includes the situation, surroundings and construction of the house;

heating, ventilation, water supply and drainage. Professor Miller.

Required of Seniors in Household Economics Course, first term of first semester, 4 hours.

224. *Household Management*. This course deals with the organization of the household, expenditure of the income, and general management of the home. Professor Miller.

Required of Seniors in Household Economics Course, second term of first semester, 5 hours.

225. *Foods*. This course includes a study of the food principles as found in the different classes of foods, and the preparation of dishes to illustrate each principle. Professor Miller.

Required of Freshmen in Household Economics and Fourth Year Industrial Students, first semester, 3 hours practice.

226. *Foods*. Continuation of preceding course. Professor Miller.

Required of Freshmen in Household Economics and Fourth Year Industrial students, second semester, 3 hours practice.

DEPARTMENT OF ENGLISH

The courses in English aim at accomplishing two principal objects. The first is that of securing ease, clearness, and directness of expression; the second, that of promotion of culture. Much emphasis is placed on rhetoric; and not only upon its theoretical, but especially upon its practical side. The courses in rhetoric require the continuous composition of themes which are carefully criticised and returned to the student for re-writing or revision, as the case may demand. The study of literature also has a prominent place in the work of the department.

A thorough course in bibliography and the use of standard books of reference is an especially valuable feature of the course offered by this department.

No student, whose knowledge of spelling and grammar is deficient, will be admitted to college classes in English; and the department reserves to itself the right to examine in English, should it deem it advisable, any student entering college classes in that subject.

Preparatory and Industrial Courses

231, 232. *Elementary English Composition.*

Required of all students of the First Year Preparatory and Industrial Courses, first and second semesters, 5 hours.

233, 234. *American Literature.* The course consists of the reading and study of masterpieces of American Literature, with compositions based upon them.

Required of all students in the Second Year Preparatory and Industrial Courses, first and second semesters, 5 hours.

235, 236. *Expression and Advanced Grammar.* The

work consists of a half year of training in public speaking, and a half year's work in an advanced text-book in English Grammar.

Required of all students in the Third Year Preparatory and Industrial Courses, first and second semesters, 5 hours.

237, 238. *English Literature.* The study of a text-book in English Literature, accompanied by the study and reading of the best known masterpieces.

Required of Fourth Year students in the Preparatory course, 5 hours, first and second semester, and fourth year students in the Business and Domestic Science Industrial Courses, second semester, 5 hours.

College Courses

241, 242. *Rhetoric and Composition.* This course consists of the study of a text-book in Rhetoric accompanied by written compositions throughout the year, especial attention being paid to practical features such as letter writing. One hour a week throughout the first semester is devoted to Bibliography, and one hour to collateral study of prose models.

Required of all Freshmen in the General Science and Household Economics Courses, first semester; and of the same and Freshmen in Agriculture, second semester, 5 hours.

243, 244. *Rhetoric and Composition.* This course is identical with that portion of the preceding which consists of Rhetoric, Composition and Bibliography.

Required of all Freshmen in all Engineering courses throughout the year, and of Agricultural Freshmen the first semester, 3 hours.

251, 252. *Debating.* The principles of debating, accompanied by practical work.

Required of all Juniors except Engineers, first and second semesters, 2 hours.

DEPARTMENT OF HISTORY AND POLITICAL SCIENCE

PROFESSOR VAUGHAN

MRS. WINNINGHAM

Secondary Courses

261. *General History.* A rapid survey of the leading nations of the world from the dawn of recorded history down to the time of Charlemagne, 800 A. D. Mrs. Winningham.

Required of all Second Year Preparatory students and of all students in the Second Year Industrial Courses, first semester, 5 hours.

262. *General History.* Modern history from Charlemagne to the present time. Mrs. Winningham.

Required of all Second Year Preparatory students and of all students in the Second Year Industrial Courses, second semester, 5 hours.

263. *American History.* A comprehensive survey of British-American colonial history, the Revolution, and the development of the United States. Professor Vaughan.

Required of Third Year Preparatory students and of Third Year students in all Industrial courses, first semester, 5 hours.

264. *American Government.* A study of the organization, machinery, and operation of actual government under American conditions. New Mexico and the United States. Professor Vaughan.

Required of all Third Year Preparatory students and of all Third Year Industrial students, second semester, 5 hours.

College Courses

265. *Modern Europe.* A rapid survey of European history from the beginning of the sixteenth century to the fall of Napoleon. The Reformation and the French Revolution are studied in some detail. Professor Vaughan.

Required of all Juniors except those in Engineering and Agriculture, first semester, 4 hours.

266. *Modern Europe.* A course dealing with the history of Europe from 1815 to the present time. Special attention is given to the great reform movements of the century and to contemporary government and politics. Professor Vaughan.

Required of all Juniors except those in Engineering and Agriculture, second semester, 4 hours.

267. *History of England.* A general course covering the chief movements in English history from the earliest times to the death of Cromwell. The rise of constitutional government and the beginnings of colonization. Professor Vaughan.

Required of Freshmen in the General Science Course, first semester, 3 hours.

268. *History of England.* A study of England and the British Empire from 1660 to the present time. Special attention is given to the development of parliamentary government and the self-governing dominions beyond the seas. Professor Vaughan.

Required of Freshmen in General Science Course, second semester, 3 hours.

International Law. The development of the law of nations, its nature, source, and present status; the equality of:

states and the doctrine of intervention; laws of war and peace; the arbitration movement. Open only to Juniors and Seniors. Professor Vaughan.

Thesis Course in the History and Government of New Mexico. Amount of credit to be determined by the amount and quality of work done. Maximum, 5 semester-hours. Professor Vaughan.

Equipment

The Department of History and Political Science is reasonably equipped for its work. The College library contains about fifteen hundred volumes of literature in this field, and has in its possession a large amount of material which will serve the purpose of original investigation.

DEPARTMENT OF MATHEMATICS AND ASTRONOMY

PROFESSOR HAGERTY

PROFESSOR WIGGS

MRS. WINNINGHAM

Since the work of this institution is largely technical in its character, considerable attention is given to the utility phase of mathematical subjects, but the culture phase is by no means lost sight of. Astronomy is taught almost wholly for its culture value.

Secondary Courses

271, 272. *Elementary Algebra*. The connection of Algebra with Arithmetic is kept constantly before the student, and the solution of an unusually large number of practical problems constitutes the main part of the work, since the purely theoretical side of the subject receives full consideration later in the advanced algebra. The text-book completed is Slaughter and Lennes' High School Algebra (Elementary Course).

Required of First Year students in all Preparatory and Industrial Courses, first and second semesters, 5 hours.

274, 275. *Plane Geometry*. In this course Wentworth's Plane Geometry is completed, including about five hundred of the original exercises, Mrs. Winningham.

Required of Second Year students in all Preparatory and Industrial Courses, throughout the year, 5 hours.

276. *Solid Geometry*. In this course Wentworth's Solid Geometry is completed, including many of the original exercises. Professor Hagerty.

Required of Third Year Students in the Industrial Mechanics and College Preparatory Courses, first semester, 5 hours.

277. *Higher Arithmetic*. This course consists of a general review, and a consideration of topics not previously studied. The applied problems are of a practical nature, referring largely to questions arising in the laboratory and in ordinary commercial life. Professor Hagerty.

Required of Third Year students in all the Preparatory and Industrial Courses except those in the Business Course, second semester, 5 hours.

278, 279. *Advanced Algebra*. This course includes a review and a more complete treatment of all topics of the First Year Course in Algebra, and special emphasis is given the following: involution, evolution, quadratic equations, radicals, imaginary and complex numbers, ratio, proportion, variation, and theory of exponents, including logarithms. The text-book used is Milne's Advanced Algebra. Professor Hagerty.

Required of Fourth Year students in the College Preparatory and Industrial Mechanics Courses, first and second semesters. 5 hours.

College Courses

281. *Plane Trigonometry*. This course is fully illustrated by practical problems. Professor Hagerty.

Required of Freshmen in the General Science and Engineering Courses, first semester, 4 hours.

282. *College Algebra*. This course covers the following subjects: progressions, inequalities, undetermined coefficients, indeterminate equations, the binomial theorem for all rational exponents, permutations and combinations, variable:

and limits, series, and the elements of the theory of equations. Milne's Advanced Algebra is the text-book used. Professor Hagerty.

Required of Freshmen in the General Science and Engineering Courses, second semester, 4 hours.

283. *Analytic Geometry and Calculus.* During the first twelve or thirteen weeks of the first semester a detailed study of the following topics is made: straight line, circle, transformation of coordinates, parabola, ellipse, hyperbola, general equations of the second degree, and a few of the higher plane curves. Both rectangular and polar coordinates are used. The text-book is Riggs' Analytic Geometry. Calculus is taken during the remainder of the semester. Professor Hagerty.

Required of Sophomores in the Engineering Courses, first semester, 5 hours.

284. *Differential and Integral Calculus.* The topics treated in this course are those usually taken up in accordance with well established usage. Many practical problems in analytic geometry and mechanics are solved by the students in order to fix the principles in their minds and to maintain their interest. Campbell's Differential and Integral Calculus is the text-book used. Professor Hagerty.

Required of Sophomores in the Engineering Courses, second semester, 5 hours.

285. *Descriptive Geometry.* In this course the principles of orthographic projection, plane sections, intersections, and development of prisms and pyramids are discussed in connection with the same operations applied to cylinders and cones. A great variety of original problems is given involving the application of the principles contained in the text. The work of the class is supplemented by a drafting period at which time problems of a more general character and requiring

more time for their solution are constructed. The text used is Essentials of Descriptive Geometry, by Phillips and Miller, with frequent reference to Tray's Mechanical Drawing. (Given by Department of Mechanical Engineering.)

Required of all Sophomore Engineers, first semester, 1 hour plus 4 hours practice.

286, 287. *General Astronomy*. In these courses are studied not only astronomical facts and principles, but also the methods by which the facts have been ascertained. The work is conducted by lectures, recitations, and solar and night observations. The determination of the meridian, latitude, and longitude are among the practical problems assigned, and by means of the instruments at the disposal of the students quite accurate results are obtained. Young's Manual of Astronomy is the text-book used. Professor Hagerty.

Course 286 is required of General Science Seniors, first semester, 2 hours.

Course 287 is required of Seniors in the General Science and all Engineering Courses, second semester, 3 hours. Course 286 is not a prerequisite of Course 287.

Equipment

This department has a 6-inch portable, equatorially mounted refracting telescope, a transit theodolite having an 8-inch horizontal circle reading to 10 and a 6-inch vertical circle reading to 30, an 18-inch celestial globe, a Bausch and Lomb-Zeiss stereobinocular magnifying $7\frac{1}{2}$ diameters, two star lanterns with slides, star atlases, planisphere, 18-inch slated globe, a set of stereoscopic views of the figures for the theorems in solid geometry, the Ross mensuration blocks and dissected geometrical solids, a Thatcher's Calculating instrument, protractors, etc.

The department library contains many valuable books of reference, and receives several periodicals.

DEPARTMENT OF ECONOMICS

PROFESSOR VAUGHAN.

291. *Elementary Economics.* The purpose of this course is to give the student a knowledge of those human relations which have to do primarily with wealth, its production and distribution. The course will include also much material which might be classed under sociology, politics and ethics. The manner of treatment will be simple, concrete and practical.

Elective for all students in the Fourth Year of General Preparatory Course, first semester, 5 hours.

292. *Economics.* A year, with four recitations weekly, is devoted to the study of the principles of economics and their application in the conditions and problems of the United States at the present time. An effort will be made to acquaint the student sufficiently with actual economic and industrial conditions in the United States, and particularly in the West, so that he may be an intelligent student of public affairs and a useful participant in them. Special attention will be given to the economic and industrial history of the United States. Professor Vaughan.

Required of Juniors in all college courses, first semester, 4 hours.

293. *Economics.* A continuation of the preceding course. During the second semester the preceding study of economic principles will be made the basis for a more detailed study of the most pressing social problems of the present day. Professor Vaughan.

Required of Juniors in all college courses, second semester, 2 hours.

294. *Economics*. Two hours a week will be devoted to the study of those economic problems which are most closely connected with politics and government, to questions of governmental control of economic forces and conditions, and to those aspects of economics which have to do with the duties of citizenship. Professor Vaughan.

Required of Juniors except those in Engineering and Agriculture, second semester, 2 hours.

DEPARTMENT OF MECHANICAL AND ELECTRICAL ENGINEERING

Two courses are offered in this department: Mechanical Engineering, a four year course leading to the degree of Bachelor of Science in Mechanical Engineering; Electrical Engineering, leading to the degree of Bachelor of Science in Electrical Engineering. The two courses are very closely allied and are identical for the first two years. They differentiate at the beginning of the Junior year, each class pursuing separately those subjects pertaining to its particular branch, while some studies remain common.

Mechanical Engineering

Instruction in these courses is given by lectures, recitations, and practice, so combined as to constitute a symmetrical course of study. The endeavor is to provide the student with a broad foundation of general and theoretical knowledge, together with a liberal amount of practice in the line of his chosen profession.

Much time is necessarily devoted to higher mathematics and to technical subjects; yet certain fundamental studies, necessary to a broad and liberal education, such as English, physics, chemistry, languages, and economics are provided for.

The student is given a thorough training in the theoretical branches underlying the science of machines, together with a clear understanding of the practical conditions of mechanical devices. Shop practice offers practical illustration of the precepts taught in the class-room, and is a most essential part of the Mechanical Engineering Course. The practice is supplemented by lectures on the care and use of the various tools and materials used in the engineering profession.

301, 302. *Instrumental Drawing*. Instruction in the use and care of drafting instruments; exercises in lettering, geometrical construction, projections and shading.

Required of all Freshmen Engineers, first and second semesters, 4 hours practice.

303a. *Mechanical Drawing*. A continuation of Courses 301 and 302 involving the making of modern detail and assembled working drawings, tracings, and blue-prints of machines.

Required of all Sophomore Engineers, first semester, 4 hours practice.

303b. *Mechanical Drawing*. A continuation of the preceding.

Required of Sophomore Mechanical and Electrical Engineers, second semester, 6 hours practice.

304. *Machine Design*. Mechanical Drawing is merged into Machine Design, of which it forms an important part, and affords constant opportunity for further practice in making drawings of standard types of machinery. The work in this subject consists chiefly of the design of the elements of machines, such as bolts, rivets, riveted joints, journals and bearings, pulleys, gears, cams, etc., also the complete design of a steam boiler.

Required of Junior Mechanical and Electrical Engineers, second semester, 6 hours practice.

305. *Machine Design*. A continuation of the preceding course.

Required of Senior Mechanical Engineers, first semester, 4 hours practice.

307. *Elements of Mechanics.* In this subject the general laws of statics and dynamics are studied with reference to solids, liquids and gases, and the fundamental principles are applied to the solution of a wide range of problems.

Required of all Sophomore Engineers, second semester, 3 hours.

308. *Mechanism.* Under this head are studied the principles underlying the acting of the elementary combinations of which all machines are composed; the communication of motion by gear wheels, belts, cams, screws, link work, etc.

Required of Junior Mechanical and Electrical Engineers, second semester, 2 hours.

309. *Graphic Statics.* This subject treats of the solution of engineering problems by means of drafting room methods, and the design of roof and bridge trusses by simple but accurate methods. (Given by Department of Civil and Irrigation Engineering.) Associate Professor Stocker.

Required of all Junior Engineers, first semester, 3 hours.

310. *Steam Engines and Boilers.* Under this head the principles underlying the construction of the various forms of steam boilers are studied. Attention is given to the various details in their design and operating, such as the size of flues, thickness of plates, styles of riveting, bracing, the amount of grate and heating surfaces, etc., as well as to various attachments. The student makes a study of the general principles of the steam engine and of the various types in common use, and investigates the many problems relating to their structure and efficiency.

311. *Applied Mechanics.* The work of the first semester in this subject embraces a study of the laws of equilibrium, motion, work, and energy, as applied to particles and rigid bodies; also a study of the center of gravity and the moment of inertia. The stresses in the steam engine are investigated and the subject of friction is carefully considered.

Required of all Junior Engineers, second semester, 4 hours.

312. *Applied Mechanics.* The second semester's work in this subject considers the condition of stress, strain, and elasticity of materials. The theory of bending moments of beams and columns, and torsion of shafts is thoroughly studied. This course also includes a study of the theory of reinforced concrete.

Required of all Junior Engineers, second semester, 3 hours.

313. *Engineering Power Plants.* The work in this subject consists of the investigation of the sources of power and a comparison of the relative merits of each. Most economical arrangements are considered. The application of electricity to power, lighting, street railway work, and mining work is also considered.

Required of Senior Mechanical and Electrical Engineers, second semester, 3 hours.

314. *Thermodynamics.* This subject treats of the solution of problems involving the action of heat as applied to steam engines, gas engines, and other thermal motors. The use of compressed air and refrigerating machines is also thoroughly discussed, so that the student may become familiar with present day practice.

Required of Senior Mechanical and Electrical Engineers, first semester, 5 hours.

315. *Engineering Structures.* This subject embraces a study of the design and construction of foundations and superstructures, the selection of materials, superintendence, specifications, etc.

Required of all Senior Engineers, second semester, 2 hours.

316. *Engineering Laboratory.* In this subject tests are made with the engine and boiler plant, both with and without the electric plant in connection. Tests are also made on gasoline engines, air compressor, determination of moisture in steam, etc. Steam guages are accurately tested, and the student is given a careful training in engineering practice.

Required of Senior Mechanical and Electrical Engineers, first semester, 2 hours practice.

317. *Mechanical Engineering Laboratory.* Continuation of Course 316.

Required of Senior Mechanical and Civil Engineers, second semester, 2 hours practice.

318a. *Woodwork and Forging.* Bench work in wood; sawing, planing, guaging, chiseling, boring, dovetailing, fitting and joinery; construction, care and use of tools. Lectures and practice. Forging: Care of fire, heating, drawing out, bending up, setting, swaging, welding, tempering, and annealing, tool making and dressing.

Required of all Freshmen Engineers, first semester, 6 hours practice.

318b. *Woodwork and Forging.* Continuation of the preceding course. The work in the forge shop is done during the latter part of the first semester and the first part of the second.

Required of all Freshmen Engineers, second semester, 6 hours practice.

319. *Pattern Making and Foundry Practice.* Pattern and core boxes for the molding of simple machine parts. Mixing and tempering molding and core sands; molding in green and dry sand, skin drying, making and drying cores.

Required of Sophomore Mechanical and Electrical Engineers, second semester, 8 hours practice, and Second Year students in Industrial Course in Mechanics, second semester, 5 hours practice.

320. *Machine Shop.* Laying out work. Chipping, filing, fitting, scraping, drilling, shaping, and tapping work with machine tools. Cutting speed of tools and angle of cutting edge for lathe and planer work.

Required of all Junior Engineers, first semester, 8 hours practice for Mechanical Engineers; 2 hours practice for Electrical Engineers; 4 hours practice for Civil Engineers; Fourth Year students in Industrial Course in Mechanics, 9 hours practice.

321. *Machine Shop.* Screw cutting, taper turning, indexing, and electrical grinding. Advanced machine shop practice requiring the production of finished machines from castings.

Required of Junior Mechanical and Electrical Engineers, second semester, 6 hours practice; Junior Civil Engineers, 4 hours practice; Third Year students in Industrial Course in Mechanics, second semester, 9 hours practice.

322. *Wood Turning.* Various exercises in turning between centers; face plate, chuck work, and ornamental turning.

Required of all Sophomore Mechanical and Electrical Engineers, first semester, 4 hours practice.

325. *Materials of Construction.* A study of the properties of structural materials with the aid of testing apparatus.

including the common tests of materials in tension, compression, shear, torsion and bending. Properties and specifications of cement. Tests of concrete and reinforced concrete beams.

Required of all Senior Engineers, second semester, 1 hour plus 2 hours practice.

326. *Gas and Oil Engines.* A study of the theory, design and operation of the different types and cycles of gas and oil engines.

Required of Senior Mechanical and Civil Engineers, second semester, 2 hours.

327a, 327b. *Seminar.* Review of current engineering periodicals, abstracts and reports of papers.

Required of all Senior Engineers, first and second semesters, 1 hour each.

329a, 329b. *Free-Hand Drawing.* Outline drawing from the blackboard, principles of perspective, relative proportion and the study of the values of light and shade are developed. The advanced work is given with particular reference to the course pursued by the student.

Required of all First Year Industrial and Preparatory students, first and second semesters.

330a, 330b. *Manual Training.* This course is arranged as a general culture subject. The course will consist of drawing, bench work in wood, wood carving, and turning, together with lectures on materials and the use of tools.

Required of all First Year College Preparatory boys, throughout the year.

331a, 331b. *Carpentry*. Bench work in wood, sawing, planing, guaging, chiseling, boring, etc., construction, care and use of tools. Lectures and practice. The work of the second semester includes wood turning.

Required of Third Year students in Industrial Course in Mechanics, 10 hours practice throughout the year.

332. *Concrete*. Because of the very important place concrete has taken in nearly all phases of construction work, this course has been designed to equip men with a good practical knowledge of its properties and uses. Lectures will be given on the manufacture of cement, its selection and storage; the water-proofing of concrete, and the adaptability of concrete to structures. It will embrace a large amount of practical work in making common cement and sand tests and tests of various mixtures; design and construction of ornamental work, tiles, posts, sidewalks, beams, and columns and forms for same. Current literature on the subject will be discussed from time to time, and a study of concrete mixing machinery and block machines will be an important part of the course.

333. *Building Construction*. A course embodying lectures on materials used in building construction and conditions governing their use; methods of construction; model work in jointing and framing roofs and buildings; a study of mill construction, wood-working machinery and the steel square.

334. *Contracting and Estimating*. This course is arranged for those students who expect to use the technical knowledge they have gained in general contracting, and will consist of problems in estimating cost of material and labor in a complete engineering project and the methods of contracting for same.

335. *Engineering Laboratory.* Tests are made with the boiler plant, steam and gasoline engines, electric motors, the air compressor, etc. The student is given a practical acquaintance with engineering practice and the use and testing of the usual power-house equipment.

336. *Valve Gears.* In this subject it is endeavored to make the student familiar with the different types of valves, used on all kinds of engines, and the various mechanisms by which they are guided and regulated in their action.

Required of Seniors in Mechanical Engineering, first semester, 2 hours.

Electrical Engineering

This course is arranged to supply the demand for men who have a practical knowledge of electricity, as well as a thorough knowledge of the principles and laws governing the forces with which they have to deal. For the first two years the course is identical with the Mechanical Engineering course, but branches out separately during the third year. A well equipped electrical engineer must also be a mechanical engineer, and must have some training in the principles of steam and hydraulics.

To meet the demands of the technical work in this rapidly advancing branch, nothing but the most thorough course in the fundamental facts and principles of the science of electricity can prove satisfactory. Hence a thorough drill by means of text-books and an extended series of experiments in the laboratory with exact instruments form the necessary preparation for the latter work. Particular attention is given to the designing of electrical machinery and to the investigation of advanced problems in electricity.

345. *Elements of Electrical Engineering.* The subject treats of the elementary points of Electrical Engineering, giving the student a firm foundation for his future work. Current electricity, potential, resistance, quantity, induction, hysteresis, elementary principles of the dynamo and motor, etc., are treated in detail.

Required of Junior Electrical and Senior Mechanical and Civil Engineers, first semester, 4 hours.

346. *Dynamo-Electrical Machinery.* The theory and construction of continuous current generators and motors.

Required of Senior Electrical Engineers, first semester, 4 hours.

347. *Alternating Currents.* Includes a study of alternating currents and alternating current machinery by mathematical and graphic methods; construction, regulation, and operation of single and polyphase generators and motors, transformers, and rotary converters.

Required of Senior Electrical Engineers, second semester, 2 hours.

348. *Dynamo Design.* This subject considers the materials of construction and methods of armature winding, followed by the design of some form of dynamo together with the complete calculations for same.

Required of Senior Electrical Engineers, first semester, 4 hours practice.

349. *Electric Power Transmission.* The methods of economical distribution of electrical energy for light and power purposes; insurance rules and regulations; alternating current transmission of power; characteristics and properties of transmission lines, construction and protection; manage-

ment; economics of design and regulation; single and poly-phase systems; high-potential and long distance applications.

Required of Senior Electrical Engineers, second semester, 1 hour.

350. *Electrical Engineering Laboratory.* Experimental study of characteristics and properties of direct and alternating current generators and motors, methods of testing, theory of instruments, efficiency, regulation, etc., with complete reports.

Required of Senior Electrical Engineers, second semester, 2 hours practice.

One Year Industrial Course

A short practical course of one year is offered to meet the needs of young men who may not be able to comply with the ordinary entrance requirements. In this course the student will have the choice of the following trades: Bricklaying, blacksmithing, steam-fitting, carpentry, machine shop and tool making, plumbing, power-plant and electrical work.

The whole period of shop apprenticeship cannot be covered in these short courses, and those who finish these courses will need experience, practice and maturity before they can claim to be journeymen.

It is believed that the training received by boys will double their capacity and steadily advance them to positions of responsibility. Students desiring to enter these courses should register at the beginning of the school year, but as instruction in the shops is for the most part individual, it is possible for students to enter these classes at any time of the year.

For those who wish to take a two-year course, advanced work in each of the subjects will be given the second year.

For a satisfactory completion of any of the courses a certificate will be issued.

Shop Problems

This course was designed to supplement the shop course and to solve the problems involved in each shop course. Mechanical Drawing involving the design of the various exercises and constructions of each shop course. Discussion of current literature relating to modern practice in each branch.

Course in Carpentry. Names, use and care of tools. Use of framing square. Framing of sills. Joist framing and setting. Roof framing. Making of window frames. Stair building. Specifications and estimating. Making bills of material. Staking out buildings.

Course in Machine Shop and Tool Making. Names and care of tools. Laying out work. Chipping, filing and scraping. Lathe work; cutting speeds. Grinding of tools. Grinding centers; turning, knurling and thread cutting. Leveling and aligning shaft. Babbiting and scraping boxes. Milling machine; gear cutting, grinding; surface and internal grinding. Annealing and tempering of steel.

Course in Steam Fitting and Plumbing. Pipe fitting tools; cutting and threading small pipe. Classification of different kinds of packing. Expansion joints. Swing joints; hanging, anchoring and supporting pipes. Systems of piping for steam and hot water heating plants. Direct and indirect heating. Roughing in for bath rooms. Soldering and wiping joints. Connecting various plumbing fixtures. Calking and installing cast iron soil pipe. House sanitation. Plans and specifications.

Course in Bricklaying. Use and care of tools. Making of lime mortar. Laying brick on straight wall. Leveling. building of piers, corners and chimneys. Making arches. Setting lintels. Building buttresses. Plastering.

Course in Blacksmithing. Building fires, upsetting and drawing out. Welding; making of chains; welding axles and tires. Making and fitting horseshoes. Making and tempering of tools.

Course in Concrete. Cement manufacture. Selection and storage. Water-proofing of cement. Adaptability of concrete to structures. Practical work in making common cement and tests, and tests of various mixtures. Making of forms. Design and construction of ornamental work, tiles, posts, sidewalks, beams, and columns. Concrete mixing and concrete block machines.

Course in Dynamos and Motors and Electric Wiring. Elements of Electrical Engineering (Course 345). Installing and connecting dynamos and motors. Electrical testing of dynamos and motors and arc lamps. Electric light and power wiring; conduct, molding and cleat work; telephone and bell wiring. Calculating size of conductors.

Course in Steam and Gas Engines. Gas and Oil Engines (Course 326). Making steam and gas-tight joints. Machine shop practice. Testing steam and gas engines. Valve setting. Operating of gas and steam electric power plants. Calculations from indicator cards for determining horse power. Operating and tests of refrigerating plant.

Equipment

The new Engineering Building, completed in 1913, affords greatly improved facilities for all work in Engineering. The department has three buildings devoted to its work. One of the old buildings has rooms for a forge shop, foundry, and storage; and the other contains two recitation rooms and a hall, an engine and boiler room, and rooms for wood work and machine work. The new building contains the main laboratories, shops, drawing and recitation rooms.

An excellent department library containing standard works pertaining to the engineering professions is accessible to students.

Mechanical and Electrical Laboratory. The power equipment of the College, consisting of the following engines, boilers, etc., affords opportunity for investigation by the students on the subject of steam and steam engine practice: One 40 horse-power tubular boiler, one 50 horse-power Hoppes feed water heater and purifier, one duplex steam pump, one 30 horse-power Weston automatic engine, one 8 horse-power Shipman engine and boiler, one 13 horse-power Priestman oil engine, one 15 horse-power Witte gasoline engine, one air pump and reservoir. The equipment also includes indicators for steam and oil testing, one standard steam guage tester, three planimeters, a gas meter, two calorimeters, one tachometer, one Olsen testing machine of 60,000 pounds capacity with full equipment for tension, compression, and transverse tests; one 9 K. W. direct current dynamo compound wound one 7 K. W. direct current dynamo shunt wound; one 2 K. W. rotary converter for direct and alternating current work one 3 K. W. single-phase alternator; one series wound D. C. generator; one 3-phase induction motor, and a complete terminal and switch-board equipment, as well as portable instruments for direct and alternating current investigations. The mechanical laboratory contains a complete ammonia refrigerating plant, and a compound two-stage air compressor for demonstrating the principles of thermo-dynamics and for thesis work.

The Machine Shop has one 16-inch x 6-foot tool room lathe with compound rest and taper attachment, one 14-inch x 8-foot standard engine lathe, one 12-inch x 5-foot standard engine lathe, one 13-inch standard engine lathe, one 24-inch x 24-inch x 6-foot planer, one 14-inch shaper, one 22-inch power drill press, one universal milling machine, one sensitive drill, one gas pipe threading and cutting off machine, or

power hacksaw, one improved double wheel emery grinder, as well as a large number and good assortment of drills, chucks, small tools, and machine attachments.

The Wood-working Shop contains 14 benches, six 10-inch lathes, one 8-inch x 10-foot lathe with overhanging face plate capable of turning work up to 80 inches in diameter, one combination rip and cross-cut circular saw, one Fox trimmer, one large grindstone with Brown and Sharp frame, and a good supply of small tools and appliances.

In the forge shop are 12 forges of the latest down-draft model with improved underground arrangements for the blast and exhaust pipes, one forge being equipped with a hand blower. Each forge is fitted with a full set of hammers, tongs, swages, fuller, etc. An 18-inch hand-power drill press and a punching and shearing machine form a part of this equipment.

The foundry has a brass furnace, the usual small tools, and a number of flasks for moulding.

DEPARTMENT OF CIVIL AND IRRIGATION ENGINEERING

PROFESSOR BIXBY

PROFESSOR HAGERTY

ASSOCIATE PROFESSOR STOCKER

ASSISTANT PROFESSOR KABLE

The widespread development of irrigated areas throughout the arid West, both by means of gravity flow and by pumped water, has extended the duties of the Civil Engineer to include a knowledge both of irrigation methods and of pumping machinery. The province of the Civil Engineer, as an Irrigation Engineer, becomes, therefore, the furthering of the development, conservation and economical use of limited water supplies both for irrigation and domestic purposes.

In offering a combined course in Civil and Irrigation Engineering it is the purpose of this department to equip students with a well rounded education fitting them for this particular field of engineering.

351. *Plane Surveying.* Theory of surveying; methods employed in land, city, mining and hydrographic surveys and in making maps and calculations from field notes. This course is supplemented by field work involving the adjustment of modern surveying instruments and special problems illustrating the use of the chain, level, transit, etc. Prerequisite Courses 281, 282, 301, 302. Associate Professor Stocker and Professor Hagerty.

Required of Sophomores in Civil and Irrigation Engineering, first semester, 2 hours plus 6 hours practice in the field.

352. *Plane Surveying.* A short course in plane surveying designed to meet the needs of Mechanical and Electrical Engineering students as well as students in Agriculture

for a general study of the subject, including the use of the level and transit. Associate Professor Stocker.

Required of Sophomores in Mechanical and Electrical Engineering and Agricultural Courses, first semester, 1 hour plus 4 hours practice.

353. *Topographical Surveying*. This course includes the study of topographic methods, instructing the student in the use of instruments required and the making of topographic surveys by stadia, plane table and co-ordinate methods. Prerequisite Courses 281, 282, 301, 302, 351. Associate Professor Stocker.

Required of Sophomore Civil Engineers, second semester, 2 hours plus 6 hours practice. (Students registered for 353 should take 354 or should keep open the hours allotted to 354 to avoid possible conflicts.)

354. *Topographic Draughting*. This course consists of practice in making conventional signs for topography, lettering and design, and arrangement of titles for maps and other drawings. A map is also made from the field notes collected by the student in Course 353. This course must be taken with 353. It cannot be taken separately. Associate Professor Stocker.

Required of Sophomore Civil Engineers, second semester, 4 hours practice.

355. *Railway and Canal Surveying*. A course including methods employed in making reconnaissance, preliminary and location surveys for railways and canals; computation of earthwork, masonry, etc.; theory and practice of laying out simple, compound, reversed, transition and vertical curves. Prerequisite Courses 351, 353, 354. Associate Professor Stocker.

Required of Junior Civil Engineers, first semester, 3 hours plus 4 hours practice.

356. *Hydraulics*. A study of the action of forces producing equilibrium or motion in liquids; pressure, stability, flow, etc., of water under various conditions; water measurement by orifices, weirs, piezometers, rating flumes and current meters. General theory and construction of hydraulic motors and pumping machinery. Prerequisite Courses 283, 284. Associate Professor Stocker.

Required of all Junior Engineers, second semester, 3 hours.

357. *Bridge Design*. This course includes the design of pin-connected Pratt Truss by graphical and analytical methods. The design will include a study of the different methods of loading bridges and the determination of the stresses caused thereby. It will also include the making of detailed drawing of all the members of the bridge. Associate Professor Stocker.

The prerequisites for this course are Nos. 309, 311, 312, 365. Required of Senior Civil Engineers, first semester, 6 hours practice.

358. *Bridge Design*. This course is a continuation of Course 357 completing the making of a complete design of a pin-connected truss which was started the first semester. Associate Professor Stocker.

Prerequisite Courses 309, 311, 312, 357, 365. Required of Senior Civil Engineers, first semester, 6 hours practice.

359. *Irrigation Engineering*. This course includes the following subjects: relation of water to plant growth; the duty of water in all its phases; water supply for irrigation, including sources of water supply, precipitation, run-off and fluctuation of stream flow; losses of water by evaporation and seepage; storage of water, and methods of supplying water to crops; the importance of drainage in connection with irrigation and methods of draining water-logged land

with methods of preventing water-logging; pumping plants and the economics of pumping for irrigation; study of irrigation institutions including methods of establishing and protecting water rights; water right contracts; irrigation laws of the arid region and interstate problems. Assistant Professor Kable.

Prerequisite Courses 351, 353, 354, 355, 356. Required of Senior Civil Engineers, first semester, 2 hours.

360. *Irrigation Field Work*. This work is supplementary to the class work and consists of such work as will give the student an insight into field methods in Irrigation Engineering. Instruction is given in the laying out of canals, distribution systems, and damsites and in the survey of reservoir sites. The student is also given practice in the use of the current meter and in the use of the cippoletti weir. The student is also instructed in carrying out a complete test of a pumping plant, including the efficiency of the pump, engine and total plant. Assistant Professor Kable.

Must be taken with Course 359. Required of all Senior Civil Engineers, first semester, 6 hours practice.

361. *Sewage Disposal*. Study of composition of sewage, chemical analysis, changes produced by bacteria, together with modern methods of treatment, purification, and disposal of sewage. Associate Professor Stocker.

Required of all Senior Civil Engineers, first semester, 2 hours.

362. *Public Water Supply*. Quantity of water, sources of supply, quality of water from different sources, communicable diseases, modern methods of treatment and purification of water together with a study of works for distribution of same. Associate Professor Stocker.

Required of all Junior Civil Engineers, second semester, 4 hours practice.

363. *Irrigation Practice.* Elementary hydraulics and irrigation practice; laying out of laterals; grading of land; the laws governing the flow of water as applied to its measurement by weirs, rating flumes, etc.; the estimation of the amount of water required by several crops as modified by various local and climatic conditions; and some reference to related questions of plant growth and the movement and amount of soil moisture; various methods of applying water to crops; development and utilization of small water supplies; a brief study of drainage as related to irrigation. The field work consists of the equivalent of two hours per week in measuring the discharge of actual canals and laterals by weir and current meter methods, and of laying out a lateral distribution system, a survey being made to determine the most favorable method of procedure. Assistant Professor Kable.

Prerequisite Course 352. Required of Agricultural Seniors, second semester, 2 hours plus 2 hours practice.

364. *Highway Engineering.* A study of the most modern practice in the construction of roads both for city and country use, including materials used and methods employed. Associate Professor Stocker.

Required of all Junior Engineers, second semester, 3 hours.

365. *Frame Structures.* This course includes a study of roof trusses, plate girders and bridge trusses embracing the preparation of bills of materials, estimates of costs, weights, etc., and the design of simple trusses including a study of analytical methods of determining stresses. Associate Professor Stocker.

Prerequisite Courses, 309, 311. Required of Junior Civil Engineers, second semester, 2 hours plus 4 hours practice.

366. *Engineering Contracts and Specifications.* This course includes the study of the law of contracts as applied to engineering work and the preparation of specifications. Associate Professor Stocker.

Required of all Seniors in Engineering, second semester, 1 hour.

Thesis for Degree of B. S. in C. E. Original investigation in some engineering problem to be decided upon by the head of the department. The subjects of theses must be submitted at close of first semester of Senior Year.

Equipment

The equipment of the Department of Civil and Irrigation Engineering consists of four engineer's transits of standard makes (including one solar attachment); three wye levels; one dumpy level; one precision dumpy level; one 8-inch transit-theodolite complete; one complete plane table of latest pattern; hook gauges; weirs; water stage registers; and various miscellaneous instruments such as planimeters, hand levels, tapes, chains, level rods, flags and drawing instruments. The department also has a new hydraulic laboratory fully equipped to carry on original investigation work. The equipment of this department is in excellent condition, the greater part of which is entirely new, replacing many old instruments.

DEPARTMENT OF PSYCHOLOGY AND PEDAGOGY

PROFESSOR VAUGHAN.

The purpose of the course in this department is two-fold; first, general culture; second, preparation for teaching. The course in General Psychology which is offered to college seniors is a general culture course. It aims to give the student an intelligent understanding of the structure and functions of consciousness, to train him in clear thinking about immaterial things, and to develop in him a critical and understanding attitude toward his own mental process. The courses in Elementary Psychology and Pedagogy are intended as a preparation for teaching. It is not to be understood that this institution professes to duplicate the work of the normal schools. Those who wish a complete course of professional training as teachers should go to a normal school to get it. But there are many who, after completing their college course, become teachers in high schools or colleges, and these need not only knowledge of the subjects which they are to teach but also an understanding of the nature and workings of the human mind and a knowledge of the principles and practices of modern pedagogy. It is important also that those who are preparing to become teachers of agriculture, either in the public schools or in higher institutions, should have some understanding of psychology and the principles of teaching, as well as a knowledge of the subject matter of the science which they expect to teach.

368. *Pedagogy.* This is a general course in the theory and practice of teaching and in school management. It will presuppose such a knowledge of psychology and of general principles as is given in the course 370. It will attempt to deal with the actual conditions as they exist in the public schools of New Mexico and will aim to prepare teachers to

meet those conditions. Attention will be given to the movement for the teaching of agriculture in the public schools. This course and course 370 together will fully cover the requirements in these subjects for the first grade county teacher's certificate, and those who have credit for these courses are exempt from examination in these subjects. Professor Vaughan.

Elective for Preparatory and College students who are preparing to teach, second semester, 4 hours. Required of Seniors in Household Economics.

369. *General Psychology*. This course will cover the same ground as Course 370 but in a more scientific manner suited to the ability of more advanced students and without special reference to the application of psychology to teaching. It is primarily intended for general culture and to enable the student to understand himself and his own mental processes. Professor Vaughan.

Required of Seniors in General Science and Household Economics Courses, first semester, 4 hours.

370. *Elementary Psychology*. In this course will be taught in the simplest possible way the general plan of structure of the nervous system and the relation of the system to consciousness, the various types of elements of mental processes, sensation, perception, conception, memory, imagination, judgment, reasoning, feeling and willing. The aim will be thoroughly practical and the application of the principles of psychology to the art of teaching will be constantly kept in view. Professor Vaughan.

Elective for Preparatory and College students and special students who have not had or are not taking Course 369. Should be taken only by those who expect to teach. First semester, 5 hours.

DEPARTMENT OF LATIN AND MODERN LANGUAGES

PROFESSOR HOBLIT

In this department courses are offered in Latin, Spanish, French and German. Emphasis in each course is placed upon the practical; in Latin, grammar, study of roots, word formation and translation are emphasized; in Spanish, reading, writing and speaking; in German, reading and translation.

The work in Latin is confined to the College Preparatory course. A four years' course is offered. The work of the third and fourth years is optional, Spanish being offered as an alternative.

Latin

371, 372. *Elements of Latin.* In the first year's work the attention is directed mainly to the study of accidence and the elements of syntax, with constant drill upon the same. A limited vocabulary is acquired by means of easy exercises in reading, translation and composition.

Throughout the year, 5 hours.

373, 374. *Latin Readings.* The second year's work consists of careful reading of selections from Caesar's Gallic War and other sources, review of grammar, and exercises in Latin composition based upon the text. Mrs. Winningham.

Throughout the year, 5 hours.

Stress is laid upon accuracy of interpretation, keeping in view

375, 376. *Orations of Cicero.* Six orations are read

the distinctive features of this type of literature. Studies in syntax, with Latin composition based upon the text.

Throughout the year, 5 hours.

383, 384. *Vergil's Aeneid*. The usual secondary work in this subject.

Throughout the year, 5 hours.

Spanish

377, 378. *Elements of Spanish*. Grammar, drill upon forms, easy reading. Particular attention is given to pronunciation, writing from dictation, and simple conversation. Professor Hoblit.

Throughout the year, 5 hours for College students, 5 hours for Preparatory students.

379, 380. *Spanish Readings*. Prose works, selections from modern writers. Review of grammar, writing from dictation, reproductions from memory, original composition and speaking. Professor Hoblit.

Throughout the year, 5 hours.

German

385, 386. *Elements of German*. Study of grammar, drill upon forms, easy reading and translation, writing from dictation, practice in pronunciation and simple conversation. Professor Hoblit.

Throughout the year, 4 hours.

387, 388. *German Readings*. Selected matter of moderate difficulty. Review of grammar, exercises in translation, practice in writing from dictation, reproductions from memory, speaking. Professor Hoblit.

Throughout the year, 3 hours.

French

389, 390. *Elements of French*. This course will embrace work similar to that given in the first year in Spanish and German. Professor Hoblit.

Throughout the year, 3 hours.

DEPARTMENT OF BUSINESS EDUCATION.

PROFESSOR HOOKLAND

ASSISTANT PROFESSOR COCHRANE

MR. ANDERSON

The purpose of the courses in this department is to supply facilities for the training of young people who desire to enter upon business careers, especially in banking or some branch of the public service, in which a knowledge of business is essential. The better prepared a beginner may be in the essentials of business and modern office practices, the more eagerly he will be sought and the more rapid will be his advancement and ultimate success. It is to this end that the work of this department is planned. Subjects peculiar to the courses are listed on the following pages. These are supplemented with correlated subjects given in other departments.

For entrance to these courses, students must be at least sixteen years of age. The average of the students enrolled in this department, however, is usually much more than this. Graduates of any commissioned high school in the State will be admitted without examination to the Industrial Courses in Business. All other applicants must show that they possess qualifications necessary to carry the work creditably and successfully. Students desiring to take any of the Trade Courses will be assigned work according to their qualifications.

No guarantee is given to any student pursuing these courses that he will secure a position upon completion thereof. There is, however, little doubt but that any student satisfactorily completing a required course will be able to take a position, and no competent graduate of the department has failed to do so.

This department is supplied with twenty of the latest model typewriters. The machines necessary for the work in

office practice, consisting of adding, addressing, and copying machines, presses, cabinets, and the like, are a part of the equipment used by the students. A department library containing the latest and best publications relating to the work of this course and the best modern business periodicals, is at the command of the students.

It is important that the student enter the class in stenography at the beginning of the course. Under no circumstances will a pupil be admitted after the second week. It is seldom that one who enters late is able to complete the required work satisfactorily. No provision can be made for commencing the work of the course at any other time than is provided.

391. *Bookkeeping*. This is a study in the elements of bookkeeping. It begins with a thorough drill in the principles governing debits and credits. The student applies these principles in making book entries of ordinary business transactions. In order to elucidate the transaction, all papers involved are made out and handled by the student in connection with his book work. He thus receives a thorough drill in the forms and uses of commercial paper. The books used are cash book, sales book, invoice book, journal, check book, pass book, and ledger. Careful attention is given to the opening and closing of books, and the making out of trial balances and statements. Penmanship drill is required each day as a part of the course. Professor Hookland.

Required of Third Year Students in Industrial Course in Business, first semester, 10 hours.

392. *Bookkeeping—Practical Accounting*. After the elements of bookkeeping given in Course 391 have been mastered, the student proceeds to more advanced work. Controlling accounts and special column features are introduced, and special emphasis is placed on accountancy as distinguished from mere bookkeeping. Numerous exercises are given in trading and profit and loss statements, analysis sheets, state-

ments of resources and liabilities, opening and closing entries, and partnership adjustments. The balance sheet, in both the English and the American form, is given full treatment. The bookkeeping feature of the course illustrates an accounting system especially adapted to the wholesale or jobbing business. Daily drill in penmanship is required. Prerequisite, Course 391. Professor Hookland.

Required of Third Year students in Industrial Course in Business, second semester, 10 hours.

393. *Advanced Bookkeeping—Corporation Accounting.* A careful study is made in this course of corporation books and accounting. The stock certificate book, the stock journal, the transfer book, the stock ledger, and the minute book, are all given detailed consideration. The transactions outlined for practice work are those of the commission and brokerage business. The operating books of the corporation used are in general use in commission houses and are especially adapted for this business. Statement and balance sheet work is continued. Penmanship is required as a daily drill. Prerequisites, Courses 391 and 392. Professor Hookland.

Required of Fourth Year students in Industrial Course in Business, first semester, 10 hours.

394. *Advanced Bookkeeping—Corporation and Cost Accounting.* In this course, a study is made of the various methods of ascertaining and recording the actual production cost of articles or products. The set of books used is adapted to the manufacturing business. Analysis is made of the prime cost, burden, overhead expense, factory cost, and selling expense. The different wage systems are gone into, and the various methods of distributing factory expenses are fully treated. Advanced work is also given in corporation account-

ing. The drill in penmanship is continued. Prerequisites, Courses 391 and 392. Professor Hookland.

Required of Fourth Year students in Industrial Course in Business, second semester, 10 hours.

391a, 392a, 393a, 394a. These courses cover practically the same ground as Courses 391, 392, 393, 394, respectively, but are more elementary. Professor Hookland.

Required of students in Business Course, 10 hours.

395. *Farm Accounting*. This is an elementary course in farm accounting. It is designed to give a simple, practical method of keeping farm records. The principles of cost accounting, so essential to success in manufacturing, are here applied in the production of farm products. These principles are equally applicable to general agriculture, stock raising, fruit growing, and market gardening. A preliminary drill will be given in the general rules of debiting and crediting for the benefit of students taking this course who have not had bookkeeping. Professor Hookland.

Elective, 5 hours.

397. *Typewriting*. This subject consists of practice work in typewriting. The touch system is used and the student is required to transcribe manuscripts and printed matter neatly and free from mistakes at a reasonable rate of speed. Assistant Professor Cochrane.

Required of Fourth Year students in Industrial Course in Business, and Second Year students in Business Course, first semester, 10 hours practice.

398. *Typewriting*. This is a continuation of Course 397, and is chiefly devoted to the construction and writing of business letters in conformity with standard forms, and work

in billing and tabulating statements. Assistant Professor Cochrane.

Required of Fourth Year students in Industrial Course in Business, second semester, 10 hours.

400. *Spelling*. A thorough drill is given in the meaning, use, and spelling of ordinary words and business terms. Assistant Professor Cochrane.

Required of First Year students in Business Course, first semester, 2 hours.

401. *Commercial Geography*. This subject is a study of the earth from an economic point of view. As a basis, a preliminary examination is made of those natural features and processes which most directly help or hinder man in his material progress. A detailed treatment is given of the chief products entering into commerce, studying each in its relation to the conditions governing its production, and its chief sources of supply. The industrial regions of the United States are taken up and studied both as individual and interdependent units. A study is also made of the leading foreign industrial centers, especial emphasis being placed upon trade routes, modes of transportation, and international commerce. Professor Hookland.

Required of Second Year students in Industrial Course in Business, and in Business Course, first semester, 5 hours.

401a. *Natural Geography*. This course is arranged for Trades Course students in Business as it is preparatory to Commercial Geography. Special attention is given to the natural features of the earth's surface, climatic zones, and other conditions which affect vegetable and animal life. A study is made of the natural divisions forming industrial regions with commercial centers. The political divisions are dwelt upon

only to such extent as is necessary to form a basis for the study of international commerce. Professor Hookland.

Required of First Year students in Business Course, second semester, 5 hours.

403. *Bank Accounting.* A practical method in bank accounting in general use is illustrated in this course. The transactions outlined are those of a national bank. The student is required to handle notes, checks, drafts, certificates of deposit, and other papers involved in the transactions; to make collections, remit to correspondents, make clearances and to carry out many other details characteristic of the banking business. A brief study is also made of the national bank act and the new currency law. Prerequisites, Courses 391 and 392. Professor Hookland.

Elective.

407. *Commercial Law.* The work covers the chief principles underlying the law of contracts in general, negotiable instruments, agency, partnership, corporations, sales, public service companies, insurance and real estate.

Required of Fourth Year students in Industrial Course in Business, and Second Year students in Business Course, second semester, 5 hours.

409. *Business English.* This course consists of a very thorough discussion of all forms of letters employed in business correspondence. Attention is also given to the meaning and use of ordinary business terms, two hours each week being devoted to word study. How to do business by letter is the chief subject taught in this course. Assistant Professor Cochrane.

Required of Fourth Year Students in Industrial Course in Business, Second Year students in Business Course, and all students in Stenography, first semester, 5 hours.

409a. *Business English.* This is a continuation of the preceding course, and is devoted to the subjects of effective advertising, salesmanship, and private secretaryship. During the last half of the course, the time is given chiefly to office practice. Students are required to take stenographic and transcription work from the different departments of the College, and are familiarized as far as possible with the routine and equipment of business offices. Professor Hookland and Assistant Professor Cochrane.

Required of Fourth Year students in Industrial Course in Business, and all students in Stenography, second semester, 5 hours.

410. *Commercial Arithmetic.* This course includes the subjects of profit and loss, trade discounts, commission and brokerage, interest and discount, stocks and bonds, investments, insurance, taxes and customs, equation of accounts, and partnership settlements. Special attention is given to short methods, and sufficient practice given to afford facility in their use. Professor Hookland.

Required of Second Year students in Industrial Course in Business, and in Business Course, second semester, 5 hours.

410a. *Industrial Arithmetic.* The work in this course gives the student a thorough drill in the problems that come up in every-day business life. Correct methods in addition, short cuts in multiplication, and methods of proving results, are made subjects for class drill. Practical measurements in paving, lumbering, brick laying, papering, cement work, and building are fully treated, and problems involving weights, volumes, dimensions, time and angles, are given for oral and

written work. The subject of percentage is also thoroughly mastered. Professor Hookland.

Required of Business Course students, second semester, 5 hours.

410b. *Arithmetic*. This is a study in the elements of Arithmetic, given for the benefit of Trades Course students, who desire to review the primary operations and fundamental principles involved in the subject. Most of the work in this course is given in the form of class drills. Quick mental calculations form an important part of the work. Professor Hookland.

Required of First Year students in Business Course, first semester, 5 hours.

411. *Stenography*. In the first semester, the work is elementary in character, being a thorough study of the principles of shorthand. Assistant Professor Cochrane.

First semester, 10 hours.

412. *Stenography*. In the second semester, it covers word signs and outline drill, as well as an advanced grade of work, introducing a good deal of business and other dictation. Text-books: Graham's Shorthand Manual, revised edition; Graham's Business Letters, first series; Tinus' Dictation Studies. Assistant Professor Cochrane.

Second semester, 10 hours.

413, 413a. *Typewriting*. The outline of this course corresponds to the outline of the stenography course; the first semester being elementary, covering correct fingering, touch mechanism, and care of machine. The second semester covers forms, typewriting from dictation, and transcription from shorthand notes. The touch method is used entirely. Work

absolutely free from errors is required. Assistant Professor Cochrane.

10 hours practice throughout the year.

415, 416. *Advanced English Stenography.* This course consists of the study of the science and art of phrase writing, court reporting, etc. This course in stenography is open only to those who hold a certificate from the English or Amanuensis course or its equivalent from some other institution. This course runs the entire year of nine months, and any one completing it will be able to take the United States Civil Service examinations without any difficulty. Not given for less than three students. Assistant Professor Cochrane.

10 hours, both semesters.

Requirements for the Reporting Diplomas. First, thirty minutes dictation, amounting to at least one hundred lines of transcript, transcribed on the typewriter in two hours. Second, five minutes speed test, writing one hundred and twenty words per minute, and reading same back from notes in eight minutes.

417. *English-Spanish Stenography.* The experience of the past years has shown conclusively that a strong and growing demand exists for competent English-Spanish stenographers. The conditions existing in this locality and institution are so favorable for work in English-Spanish stenography that they may be said to be almost unique. The calls upon this College for such stenographers during the past few years have far exceeded the supply. Although these calls come principally from Mexico, there is an increasing demand in the United States and the newly acquired Spanish speaking possessions; and it is believed that the business opportunities open to competent English-Spanish stenographers are most desirable. For admission to this course students must show that they are prepared to complete the course within one year. To

do this some previous knowledge of both English shorthand and the Spanish language is desirable and usually necessary.

The work in this course consists of advanced English stenography for the first semester and the second semester's work consists of a study of the principles of Spanish stenography followed by Spanish dictation. Not given for less than three students. Mr. Anderson.

Second semester, 10 hours.

DEPARTMENT OF MUSIC

This institution offers excellent facilities for the study of music. The work of the department includes a Military Band, an Orchestra, a Choral Society, and private work in Piano and Voice.

Band. A military band of about twenty pieces has been organized in connection with the Cadet Battalion. Students who have the necessary musical ability are detailed for this work, which takes the place of regular military drill. Band practice is held on three days of the week at the drill hour and the band participates regularly in battalion formations. The College owns a full set of band instruments, which are loaned free of charge to members of the band.

Orchestra. An orchestra of about twelve pieces has been formed. The work of the orchestra is entirely voluntary. Students who participate in it receive a great deal of excellent musical training without cost. The orchestra has frequently appeared on public occasions.

The course in Piano Music varies to meet the need of each individual student. The training is not alone for the acquirement of finger dexterity, but for a more comprehensive idea of pianoforte music.

College students whose courses admit of electives, may receive credit for each year's work when two private lessons a week are taken and not less than two hours a day are devoted to practice.

The work in vocal music is divided into private work and general class and chorus work. The course in private lessons is complete and thorough. Particular attention is given to correct breathing, tone productions, and distinct enunciation.

Students who are taking private lessons in Piano or Voice

are allowed the free use of the College pianos for practice. The College owns five pianos. College credit will be given for advanced work in Music, subject to the recommendation of the instructor and the President of the College. In every case where college credit is desired application should be made at the beginning of the session.

The charge for private lessons in Piano or Voice, for one lesson per week, each semester is \$18.00.

Students must enroll as for other studies, so that a record will be kept of the work they have entered. No lessons will be given until the student presents a receipt for the term from the Registrar. No allowance will be made for omitted lessons, except in the case of protracted illness, and due notice must be given as early as the day before lessons are resumed. No reduction will be made for pupils entering late in the term, except where pupils enter after six or more weeks of the term have passed. Music students withdrawing before the end of the term will be charged at the rate of \$1.25 per lesson for all lessons taken or that could have been taken up to the time of withdrawal.

MILITARY SCIENCE AND TACTICS

The primary object of this department is to furnish the country each year with a class of young men who are fitted to become efficient officers of volunteers in time of war.

For this reason the department is fostered by the United States government, and is practically maintained by it without expense to the College.

The professor is an officer of the army detailed for this duty by the President of the United States, and the equipment—of the value of about \$5,000—is issued to the College by the War Department. It includes two pieces of artillery with their accompanying limbers, cadet rifles and bayonets, belts, and a yearly allowance of ammunition for target practice.

The military course is required to be taken by all physically qualified male students of the College, preparatory or industrial course, in regular or special classes, except juniors, seniors, and graduate students. In exceptional cases, College students in their sophomore year, who have pursued the military course satisfactorily for three years, may be excused from the regular work of the course.

The department offers the following comprehensive course of instruction:

Practical. Infantry drill regulations, through the school of the battalion in close and extended order. This includes the ceremonies of battalion parade, review and inspection, guard mounting, and escort of colors, marches, outposts, advance and rear guards, etc. Field service regulations. Manual of guard duty. Firing regulations for small arms, with target practice at ranges from one to six hundred yards.

Theoretical. This includes the portions of the above subjects covered by the practical instruction, and may be supplemented by lectures.

Aside from its benefit to the country in time of war,

this course is of great and immediate value to the individual student. The drills and exercises are mild forms of physical training, giving an erect and graceful carriage and correcting the bad habits of body to which students are prone. But their chief value to the student lies in the mental and moral discipline they afford, for, by their practice, he acquires the habit of self control, respect for authority, and the fitness to exercise it.

Uniform. Each student classified for the military course will be required to deposit with the Registrar at the time of registration the price of the adopted uniform, see page 22. The uniform of a cadet consists of the regulation "Montana Peak" hat, two olive drab shirts, two pairs of Khaki breeches, puttee leggins, and regulation army jacket. Tan shoes are required to go with the uniform. The College purchases the regulation tan army shoes at wholesale by contract and furnishes them to the students at cost, about \$3.00.

The uniform of the College may be worn by any male student in good standing. When worn it must be in a military manner, shall be complete, not combined with articles of civilian clothing, and in the case of students not active members of the Cadet Corps, it is not to be accompanied by any insignia of rank in the corps. But this prohibition shall not apply to special, social or ceremonial occasions when it may be desired to show former membership and rank.

Students excused from military drill by reason of physical disability or for other cause may be required to take an equivalent amount of corrective work in physical culture or of class room work.

DEPARTMENT OF PHYSICAL EDUCATION

PROFESSOR BADENOCH.

The Department of Physical Education has to do with the physical development and welfare of the students. The department aims to do three things:

First, to give all students a thorough working knowledge of the laws of health and hygiene and the best methods of keeping themselves in condition for the most effective work, both mental and physical, and not only to communicate scientific information along these lines but also to create among all students a genuine enthusiasm for wholesome living and the most complete physical efficiency.

Second, to develop the body by providing definite work in gymnastics. This work is designed both to develop those who are in normal physical condition and to correct the defects of those who are in some measure abnormal in carriage or development.

Third, to exercise a careful supervision over all competitive forms of college athletics, so that only those shall participate in the several games who are physically fit to do so, and so that the idea of clean and fair sport shall prevail rather than the idea of winning at any cost. College athletics, properly conducted, are a school of honor as well as of physical discipline. The aim is to bring all college athletics into such relation to this department that football, baseball, basketball, etc., shall have a genuinely educational effect both on those who participate in the games and on the College as a whole.

The work of this department, like that of any other scientific department, is partly theoretical and partly practical. The instruction in health and hygiene is class-room work, while the gymnastics and athletics correspond to the laboratory and practice work of other departments.

All boys, except Juniors and Seniors, are required to take one period of work per week in this department (in addition to four periods of military drill), and all girls, except Juniors and Seniors, are required to take four periods per week.

EXTENSION DEPARTMENT

PROFESSOR W. T. CONWAY, SUPERINTENDENT

The work of this department for the present is seriously limited from lack of funds available for this purpose. The purpose of the department is to carry the benefits of the College, so far as possible, to those who cannot come to the College, and to give to the farmers of the State, in the most concrete and practical form, the results of the experimental and demonstration work which is done here. During the year the following forms of work will be carried on:

Local Farmers' Institutes will be assisted so far as possible by sending lecturers on request to be present at their meetings to address the meetings and to consult with the farmers regarding the problems which they have met.

Boys' and Girls' Industrial Club Contests will continue to be organized in co-operation with Farmers' Institutes, county organizations and local district schools. These contests will tend to improve the quality and increase the yield of crops by proper seed selection and better methods of cultivation. They will also better the conditions in the home by increasing the skill of the young house-keepers.

Encouragement will be given to the planting of school gardens, both for beautifying the school grounds and for use in connection with the teaching of agriculture in the schools.

A Correspondence Course in Agriculture for Teachers is offered for the purpose of helping those teachers who have not had the privilege of attending the Agricultural College. Other Correspondence Courses in Fruit Growing, and Poultry, are offered. A nominal fee of \$1.00 is charged for each one of these courses to cover the cost of postage and stationery.

During the past year about fourteen hundred farmers have been addressed by lecturers from the College.

STUDENT ORGANIZATIONS

The Student Body

For several years there has been an organization of the students known as the Student Body, which has had for its object the promotion of college spirit and the welfare of the student organizations in general. This organization adopted a constitution embodying a commission form of government, under which each class or department elects two representatives, the resulting commission transacting all business of the Student Body. The acts of the commission are subject to initiative petition and vote of the Student Body as a whole. The constitution also establishes the honor system, by which the conduct of any student may be investigated and acted upon by the commission. The Student Body has control of the College weekly paper and elects its editor at the close of each school year.

The Round-Up.

The "New Mexico Collegian," founded in 1893 by the Columbian Literary Society, and the "College Weekly," founded in 1906, by the Stenographers' Association, combined in 1907 forming "The Round-Up," a weekly under the control of the Student Body. The paper is in newspaper form. The paper is quite successful, due largely to the work of the editorial staff and the strictly business basis under which it is conducted.

Young Men's Christian Association

This association was formed on September 23, 1905, by Mr. Titus, the district secretary stationed at El Paso, Texas. A great deal of interest is taken in the work. The membership is made up of students and faculty members. The in-

fluence on the life of the student body is gratifying to the College authorities. A handsome two story building with large basement has been erected by popular subscription and has proved a most valuable addition in many ways.

Young Women's Christian Association

Over ninety per cent of the young women in the College belong to the Young Women's Christian Association, which has been active and prosperous for several years.

This organization has been a source of benefit to the young ladies through an increased sense of responsibility, and profit in nearly all committees and especially the weekly devotional meetings, which have been held in Hadley Hall Assembly room. The value of the Association to the young women of preparatory school and college in promoting better ideals of comradeship and of responsibility for high ideals generally, has increased steadily with the years.

The Columbian Literary Society

This organization is a revival of the old Columbian Literary Society which held for many years a prominent place in the student life of the College. The constitution admits only male students as members of the society. Meetings are held fortnightly and special prominence is given to oratory, debating and parliamentary practice. An annual debate is held between the members of the Columbian and Atadida Literary Societies; and these together with the state contests and prizes offered by the Alumni are creating an ever-increasing interest in public speaking.

The Atadida Literary Society

This is a literary society formed by the young women of the College, and has virtually the same aim as the Columbian. Some excellent and earnest work has been done during

the past years; and the members feel that they have derived great benefit from it. Members of the Atadida Society may take part in most of the contests open to the Columbians. Every young woman in College should join this society.

Agricultural Club

In order to foster a spirit of co-operation among the students and between the students and faculty, and to increase the interest in the agricultural work generally, this club has been organized and officered by the students under the direction of the agricultural faculty. The work of the club consists of weekly meetings for the purpose of hearing papers read by students, by visitors, and by the faculty members, with an occasional social affair to which the general public is invited. Regular meetings are held each Wednesday night.

Commercial Club

This organization is composed of students in the Department of Commerce. Its aim is to encourage a vital interest in current commercial questions, and to afford opportunity for discussion of industrial and economic problems. In addition to the debates and other features participated in by its members, it provides for lectures by practical professional or business men given, one each month, during the school year. The club is a medium through which its members may get in touch particularly with the business interests of the Southwest. Commercial students will find it to their advantage to join this organization.

Athletic Association

In 1893 the students organized the first Athletic Association to encourage and promote physical education and hygienic training of its members and to foster all athletic sports suitable for college students. The organization has been

in continuous existence since that date and has expanded and developed until it is the best organized and equipped, both with athletic goods and grounds, and with funds to carry on its work, of any like organization in the State. Every student in the institution, while in good standing, is eligible to membership. The work of the organization is under the direct supervision of the head of the Department of Physical Education.

The efficiency of the association is shown by its work. It has engaged successfully each year in all lines of college sports; baseball, basketball, football, track and field athletics as well as tennis. The track team now holds the three silver loving cups presented to the Intercollegiate Association by Hall and Learnard of Albuquerque, Manasse Bros., of Las Cruces, and H. D. Bowman of Las Cruces. It also holds three bronze shields presented by the Southwestern Amateur Association, to the winner of first place in annual track and field meets.

An active tennis association was formed in 1913 and tennis is played throughout the entire college year. There are seven courts in the college community.

The College field is the best in the State. There are good fields for football and baseball and a quarter mile track with a straightaway for the 100 and 220 yard events.

The details of the administration are cared for by a board of control consisting of six members elected by the members of the Association.

COLLEGE RULES

This institution has no written rules relating to the conduct of students but any violation of the accepted code is dealt with by the President as the particular case may demand.

Examinations

1. Examinations will be held at the middle and end of each semester.
2. Entrance examinations will be held at the beginning of the first semester.
3. Reports will be sent to parents or guardians of all students after each examination.

Grading

1. The system of grading is on the scale of 100, 70 being the lowest passing grade. Students whose grades fall below 70 in any subject but not below 55 shall be conditioned and may continue the work of the class. Students making a grade of 85 in their daily class work may, at the discretion of the instructor, be excused from examination.

2. All conditions must be removed at or before the time of the next regular examination. Examinations will be held at the beginning of the first semester for the removal of conditions of the previous semester. A student failing to remove any condition will be dropped from that class.

3. In making up the term grade in any subject, in case an examination has been held, the average daily grade is added to the examination grade and the sum divided by two. In case no examination is held at the end of a semester, the average daily grade is taken as the final grade.

4. If a student fail in half of his work he may at once be dropped to a lower class, or from college, as the President may decide. Whenever a student, by action of the President or

course of study committee is put into a lower class, he may be required to repeat all the studies of that class, whether he has previously passed them or not. A student who has been required to drop a subject by reason of failure may be required to take in place of it any subject, whether previously passed or not, to which he may be assigned.

Classification

1. Students are classified according to the number of units they have completed. Upon completion of the work required for entrance, they are classified as Freshmen. Four units of college work are required in each year of the college course, in addition to the military drill or physical culture, required of all able bodied students not classified as juniors, seniors or graduates.

A unit consists of the work done in any subject having four or five periods of recitation per week throughout a college year of not less than 36 weeks. In calculating credits, two periods of laboratory or practice are counted as equivalent to one period of recitation.

2. No student taking a regular course is allowed to take up any subject in that course until he has passed in all preceding work necessary to fit him for that subject. Neither will such a student be excused from any prescribed work in that course except by action of the President.

3. No special student is allowed to enter any class unless in the opinion of the instructor in charge he is prepared in all necessary preceding branches.

4. In case of any conflict in the program of studies the higher subject shall give way to the lower unless otherwise ordered by the President.

5. This college will accept credits from other institutions of equal rank.

6. To withdraw from any class, a student must present

to the instructor the proper withdrawal card signed by the President.

7. To pursue special work in this institution a student must present reasons in writing for the same to the President for his approval. (See *Special Students*, p. 18.)

8. No student will be assigned less than 18 hours per week, except by permission of the President.

Graduation

1. Seniors having conditions not removed at the middle of the second semester of the senior year will not be considered candidates for a degree.

3. Each candidate for graduation is required to prepare a thesis, which shall be passed upon by a committee consisting of the head of the department in which the work was done, the professor of English and the President.

4. Any candidate for graduation may be required by the faculty to give an exercise on commencement day, consisting of an oration or an extract or an abstract of his thesis.

5. Subjects of theses must be presented to the head of the department for approval not later than the end of the first semester of the senior year.

6. All theses must be handed in for final inspection by the committee referred to under Section 3 at least one week before commencement day, and finished theses must be filed with the Registrar not later than Monday of commencement week.

7. A thesis in order to be finally accepted must be clearly typewritten on good paper, 8½x11 inches in size, and bound for preservation.

Absence or Tardiness

1. Any student who has been absent from class and has failed to render an excuse within two days after returning may be excluded from all classes until a satisfactory explanation has been made, and will be given a daily grade of zero in all classes until reinstated. Women students must render excuses for absence from classes to the Dean of Women; male students to the President or such instructor as he may designate. A student will be given a daily zero for each absence unexcused, unless the work is made up to the satisfaction of the instructor.

2. Any student who is more than ten minutes late at class must render an excuse the same as for absence. A student who is more than ten minutes late may be excused by the instructor immediately after class.

College Organizations

1. The public exercises of all college organizations are subject in time, place, and character to the approval of the President or faculty. When possible, notice should be handed to the President two weeks before the date desired for the exercise.

2. The faculty reserves the right of passing upon the constitution and by-laws of all college organizations.

Miscellaneous

1. It is the duty of any instructor or other college officer to note and rebuke violations of good order.

2. No student whose college work is unsatisfactory shall be permitted to take part in any public exercise connected with the college.

3. A student excused from Military Drill for physical

disability or other reason, shall be required to take either corrective physical exercise or additional class-work to the amount of three practice hours each semester.

4. Smoking or the carrying of lighted pipes, cigars, or cigarettes is not permitted in any of the college buildings or upon the campus.

5. An honor roll consisting of the names of those students whose class grade is above 90 in four subjects will be published in the catalogue.

6. No classes are held on Saturday or Sunday, but the faculty reserves the right to hold field excursions on Saturdays in connection with the work of various classes or for a military encampment, and students shall be required to attend same.

Faculty Advisers

An Advisory System was put into effect at the beginning of the 1913-14 college year. By this plan the students are divided into groups and a faculty member is assigned as Adviser to the students of each group. His duties are to exercise a special oversight over them, to study their needs, attend to their development, and help them in every possible way, both in and out of the class room.

CATALOG OF STUDENTS

1913-1914.

Graduate

Clay, Cassius L.	New Orleans, La.
Cochrane, Leon J.	Denver, Colorado.
Quintero, Fernando	Las Cruces, N. M.
Pritchard, J. Leroy	Washington, D. C.
Stewart, Rupert L.	Mesilla Park, N. M.
Wilson, Earl J.	East Las Vegas, N. M.

Seniors

Brownlee, Paul	Las Cruces, N. M.
Clayton, Robert L.	Shawnee, Oklahoma.
Geyer, Earl W.	Roswell, N. M.
Given, Paul J.	Hillsboro, N. M.
Morris, Robert E.	Farmington, N. M.
Ogilvie, Kenneth B.	Roswell, N. M.
Stuart, Sadie	Mesilla Park, N. M.

Juniors

Bone, Norfleet G.	Douglas, Arizona.
Chaffee, Charles L.	El Paso, Texas.
Elliott, J. Wallace	El Paso, Texas.
Ellison, W. M.	Marfa, Texas.
Fite, A. B.	Hope, N. M.
Frenger, Raymond	Las Cruces, N. M.
Hamilton, J. G.	Fort Sumner, N. M.
Hank, Russell	Vaughan, N. M.
Kaune, Felicitas	Santa Fe, N. M.
Kaune, Gustav	Santa Fe, N. M.
Lane, Uil	Las Cruces, N. M.
Magatagan, Robert S.	Dinuba, Calif.

Maynard, E. J.	Dedham, Mass.
Mitchell, Maurice	Las Cruces, N. M.
Quinlan, John E.	Fort Bayard, N. M.
Sigal, Albert E.	El Paso, Texas.
Thaxton, Eleanor	Mesilla Park, N. M.
Thomasson, Jesse H.	Fort Bayard, N. M.

Sophomores

Adair, Arthur	Las Cruces, N. M.
Brown, Stanley	Las Cruces, N. M.
Henschell, Ramsay	Kansas City, Mo.
Holt, Edwin L.	Las Cruces, N. M.
Jackson, Oral K.	Fort Stockton, Texas
Llewellyn, Stanley	Las Cruces, N. M.
Pohl, Richard	Belen, N. M.
Redd, John	Las Cruces, N. M.
Roy, Reba	Edgerton Junction, Mo.
Stablein, Eckert	Las Cruces, N. M.
Wagner, Fay A.	McIntosh, N. M.

Freshmen

Bousman, Nugent	Farmington, N. M.
Briggs, Leslie P.	Albuquerque, N. M.
Buvsen, Richard H.	Mesilla Park, N. M.
Crater, Winifred	Las Cruces, N. M.
Damm, Eugenio	Chihuahua, Mexico.
Day, Ruth	Las Cruces, N. M.
DeBrocq, Denise	Clarksburg, West Va.
Detwiler, Harold P.	El Paso, Texas
Fulghum, Mildred	Hillsboro, N. M.
Gardner, William Ansel	Berino, N. M.
Goebel, William R.	Santa Fe, N. M.
Hager, Mabel	Mesilla Park, N. M.
Humble, Cleve	Portales, N. M.
Locke, Lowell F.	Mesilla Park, N. M.

Powers, Homer P.	Hope, N. M.
Prewitt, Robert C.	Espanola, N. M.
Quesenberry, Fred W.	Las Cruces, N. M.
Rea, Casper	Riddle, N. M.
Stirling, Stuart,	Dayton, M. N.
Thomas, Willis	Gallup, N. M.
Vickers, Gates S.	Deming, N. M.
Walker, Rose	Mesilla Park, N. M.
Wharton, James Edward	Douglas, Arizona

Stenography

Bradley, Aretus H.	Las Cruces, N. M.
Brownlee, Ruth	Las Cruces, N. M.
D'Oliviera, Rea	Tucumcari, N. M.
Harris, Mae	El Paso, Texas.
Harris, Vera	Carizozo, N. M.
Hayward, Dorothy	Santa Fe, N. M.
Lemon, Blaine	Las Cruces, N. M.
Livesay, Renick	La Union, N. M.
Longbottom, John G.	Las Cruces, N. M.
Ricketson, Mae	Lake Valley, N. M.
Stuppi, Clarence	Magdalena, N. M.
Summerford, Beulah	Las Cruces, N. M.
Watlington, Marion	Albuquerque, N. M.

Special

Alvarez, Cruz	La Union, N. M.
Anderson, Edna E.	Hillsboro, N. M.
Brainard, Noble	Artesia, N. M.
Butler, B. F.	New York City.
Conway, Mrs. W. T.	Mesilla Park, N. M.
Cox, Lester	Hagerman, N. M.
Culley, Matthew	Wagon Mound, N. M.
Davis, Nina	Mesilla Park, N. M.
Dubs, Samuel F.	Douglas, Arizona.

Malone, Levi Q.	State College, N. M.
Reeves, Leetha	Las Cruces, N. M.
Robertson, Jerome B.	Crawford, Texas.
Saenz, Gabriel Jesus	Mexico City
Sessoms, Robert L.	Waycross, Ga.
Sessoms, Ralph B.	Waycross, Ga.
Sparks, Ralph	Santa Fe, N. M.
Thaxton, Early	Mesilla Park, N. M.
Thompson, Ruth	State College, N. M.
Vaughan, John H.	State College, N. M.
Wade, Wilson	Las Cruces, N. M.
Ware, R. V.	Plainview, N. M.
Wiggs, Joseph W.	State College, N. M.
Williams, Elizabeth	Mesilla Park, N. M.

Fourth Preparatory

Archer, William Andrew	Mesilla Park, N. M.
Berrier, Anna	Mesilla Park, N. M.
Buvons, Margaret	Mesilla Park, N. M.
Coats, Alva	Mesilla Park, N. M.
Dormany, Charles E.	Las Cruces, N. M.
Ellwood, Lillian	Las Cruces, N. M.
Ellwood, Marion	Las Cruces, N. M.
Harrett, Chester	Portales, N. M.
Hoddard, Jettie	Mesilla Park, N. M.
Iamblen, Henry	Chihuahua, Mexico
saacks, Jesse	Las Cruces, N. M.
Ansell, Dillman C.	Santa Fe, N. M.
indsay, Hucie	Las Cruces, N. M.
ong, Robert	Ranger Lake, N. C.
eer, Edwin	Portales, N. M.
arker, Lillian	Santa Fe, N. M.
uesenberry, Joseph	Las Cruces, N. M.
entfrow, Dette	Mesilla Park, N. M.
albot, Grace	Artesia, N. M.

Taylor, Earl	Las Cruces, N. M.
Tuttle, William B.	El Paso, Texas
Woodson, Corinne	Las Cruces, N. M.

Third Preparatory

Adams, Mary	Anthony, N. M.
Babcock, Lewis	Kelly, N. M.
Bennett, Hilary	Las Cruces, N. M.
Carpenter, Buna	Anthony, N. M.
Coe, Harvey	Mesilla Park, N. M.
Gardner, Robert Arden	Berino, N. M.
Goddard, Alfred	Mesilla Park, N. M.
Grumbles, Ida	Carrizozo, N. M.
Hamblen, Julia	Chihuahua, Mexico
Hill, Julia	Mountainair, N. M.
Howell, Hildegarde	Anthony, N. M.
James, Harold	Mogollon, N. M.
Lemon, Marian	Las Cruces, N. M.
Mitchell, Raphael	Las Cruces, N. M.
Orme, Bernice	Mountainair, N. M.
Quesenberry, Annie	Las Cruces, N. M.
Redding, Gladys	Santa Rita, N. M.
Rentfrow, Doyle	Mesilla Park, N. M.
Rentfrow, Era	Mesilla Park, N. M.
Robinson, Lewis	La Union, N. M.
Stewart, Alice	Mesilla Park, N. M.
Stuart, Esther	Mesilla Park, N. M.
Van Houten, Richard	Shoemaker, N. M.
Wallace, Ulric	La Union, N. M.
Wooten, Clyde	Las Cruces, N. M.

Second Preparatory

Adair, Clarence	Las Cruces, N. M.
Brown, Clarence	Mesilla Park, N. M.
Cartwright, Edward	Albuquerque, N. M.

Clark, Grace	Las Cruces, N. M.
Crapps, Carroll J.	Las Cruces, N. M.
Dudley, Isaac A.	Kilgore, Texas
Eaton, Ethan	El Paso, Texas.
Gatlin, John	Las Cruces, N. M.
Gayou, Eugenio	Hermosillo, Mexico
Gayou, Luis	Hermosillo, Mexico
Giacioli, Arthur C.	San Diego, Calif.
Hagerty, Mary	State College, N. M.
Hyatt, Leedrue B.	Deming, N. M.
Hyland, Gertrude	Telles, N. M.
Iles, Harry W.	Las Cruces, N. M.
James, Celeste	Mogollon, N. M.
Kronig, Louis	Watrous, N. M.
Linss, Edward	Chihuahua, Mexico
Livesay, Louie J.	Anthony, N. M.
Livesay, Ruth	Anthony, N. M.
Lloyd, Richard	Mesilla Park, N. M.
Maetavish, Ian D.	Magdalena, N. M.
May, Edgar..	Deming, N. M.
Nichols, Alva	Las Cruces, N. M.
Owen, Reatha	Corona, N. M.
Phelps, Elsa	State College, N. M.
Quesenberry, Florence	Las Cruces, N. M.
Raff, Herman	Los Lunas, N. M.
Reilly, George W.	Fairview, N. M.
Roberts, Maxey	El Paso, Texas.
Scoggins, Gertrude	Mesilla Park, N. M.
Silva, Edward	Clint, Texas.
Talavera, Juan	Chihuahua, Mexico.
Taylor, Lillian	Mesilla Park, N. M.
Will, Ralph R.	Las Cruces, N. M.
Wisbrun, Arthur	Chihuahua, Mexico.

First Preparatory

Akin, Ruth	Yeso, N. M.
Allen, Frank	El Paso, Texas.
Arnett, George	Metcalf, Ariz.
Austin, Glenn B.	Douglas, Ariz.
Baca, Dionicio B.	Magdalena, N. M.
Bamert, Carl	Las Cruces, N. M.
Beall, Fred	Vermejo Park, N. M.
Bennett, Joseph	La Union, N. M.
Brooks, Willis P.	Las Cruces, N. M.
Buell, Arthur	Mesilla Park, N. M.
Burns, Clint C.	Broken Bow, Oklahoma.
Cartwright, Chester ..	Albuquerque, N. M.
Casey, James	Quemado, N. M.
Conway, Harry	Mesilla Park, N. M.
Crow, Thomas B.	Fairview, N. M.
Evans, Cowden	La Mesa, N. M.
Fantacci, Carlo	Roswell, N. M.
Fernandez, Isidoro	Mexico City
Garcia, Gerardo	Mesilla, N. M.
Gesler, Ross	Columbus, N. M.
Golding, Fred B.	Silver City, N. M.
Gonzales, Frank	Mesilla, N. M.
Goodman, Isidor	El Paso, Texas
Hare, Clifford N.	State College, N. M.
Harrington, Harry	Guam, N. M.
Harris, Hawes	El Paso, Texas
Hill, Walter B.	Mountainair, N. M.
Hines, Gladys	Mesilla, N. M.
Hyatt, Harry	Deming, N. M.
Hyland, Harlow H.	Telles, N. M.
Insall, Grover C.	Weimar, Texas
Kelly, James B.	Water Canyon, N. M.
Kerr, Roy D.	Lordsburg, N. M.
Knight, Gertrude	Lake Valley, N. M.
Knight, Marie E.	Lake Valley, N. M.

Ladd, John	State College, N. M.
Lafferty, James	State College, N. M.
Lohman, Elmer	Las Cruces, N. M.
Lucero, Joseph	Las Cruces, N. M.
McDowell, Isal M.	Mesilla Park, N. M.
Miller, Hugh S.	Jemez Springs, N. M.
Morales, Guillermo	Zaraza, Venezuela, S. A.
Portillo, Genoveva	El Paso, Texas
Provencio, Gabriel	Mesilla, N. M.
Reily, Albert Morgan	Carrizozo, N. M.
Rhodes, Edgar	Dona Ana, N. M.
Ricketson, Nona V.	Lake Valley, N. M.
Robbins, John C.	Mesilla Park, N. M.
Rodriguez, Armando	Eagle Pass, Texas.
Romero, Alfredo	Caracas, Venezuela, S. A.
Rosenstein, Leo	El Paso, Texas.
Silverman, Moses	Douglas, Ariz.
Sorrells, Charles	Albuquerque, N. M.
Sorrells, Leonard	Albuquerque, N. M.
Thaxton, Robert	Mesilla Park, N. M.
Thompson, Harry E.	Bird City, Kansas.
Walter, Charles D.	El Paso, Texas.
Watts, Arthur	Fort Bliss, Texas.
Weir, Celia	Mesilla Park, N. M.

One-Year Trades Course

Alvarez, Jose	La Union, N. M.
Coto, Joaquin	Asturias, Spain
Goddard, Gerald	Mesilla Park, N. M.
Hellberg, Edward	El Paso, Texas.
Fremoire, Carlos	Tyrone, N. M.
Knoblock, John C.	Magdalena, N. M.
Lucero, Manuel	El Paso, Texas.
Lucero, Juan	El Paso, Texas.
Maddox, Mark W.	Aztec, N. M.
Martinez, Enrique	Mesilla, N. M.

Miller, Edward E.	Magdalena, N. M.
Miller, Roe	Fort Davis, Texas.
Phillips, Rolla Marlin	Deming, N. M.
Price, Fred A.	Lake Valley, N. M.
Rix, Albert	Hillsboro, N. M.
Schenk, Charles	Las Cruces, N. M.
Villareal, Rafael	Metcalf, Ariz.
Walker, George	Mesilla Park, N. M.
Wilson, Clarence	Lake Valley, N. M.

Music—Voice

Emile Cardinal	Lillian Parker
Alva Coats	Genoveva Portillo
Nina Davis	Carrie Reames
Wallace Elliott	Hadley Reames
Mary Hagerty	Mrs. J. W. Rigney
Mrs. S. S. Hookland	Richard Van Houten
Mrs. T. W. Insall	Rose Walker
Mary Kirwan	Marion Watlington

Music—Piano

May Adair	Gertrude Knight
Nina Davis	Louie Livesay
Francis Hagerty	Ruth Livesay
Mary Hagerty	Ethel Scott

Beulah Summerford

Honor Roll

Students receiving grades of at least 90 in four or more subjects throughout the college year of 1913-'14:

Ruth Brownlee	Mildred Fulghum	Dorothy Hayward
Harold P. Detwiler	Eugenio Gayou	Robert Edgar Morris
Rhea D'Oliviera	Ida Grumbles	Mae Ricketson

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Specials	23
Stenographers	13
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Music	25
	<hr/>
	287
Less names counted twice	15
	272

ENROLLMENT FOR EXTENSION COURSES

**Three-day Course Held in Eastern and Southern Part of
State from March 16 to April 6, 1914.**

Alamogordo	33
Artesia	108
Capitan	44
Carlsbad	50
*Hope	3
Hagerman	101
Jordan	54
*Lakewood	6
*Lake Arthur	5
*La Luz	4
Loving	31
*Malaga	4
Mills	50
Mosquero	59

*Nogal	3
*Lake Arthur	5
Portales	82
*Quay	21
Roswell	77
Roy	50
Tucumcari	26
Tularosa	28
*Miscellaneous	50
	<hr/> 889

One-Day Course

Lower Mesilla Valley, in November	25
Hill, N. M., March	55
El Paso, in April	75
	<hr/> 155

Farmers' Week Held at College January 19 to 23, 1914.

Las Cruces	28
Mesilla Park	35
Mesilla	4
Dona Ana	2
Outside of County	7
Local	46
	<hr/> 122

Recapitulation

Three-Day Courses, outside	889
One-Day Courses, outside	155
Farmers' Week	122
Total number of different persons attending short courses during year	<hr/> 1,166

*No courses were held in the towns so marked, the enrollment in these cases being visitors to other points where the lectures were given.

ALUMNI**Officers of Alumni Association****For 1913-'14**

President	A. B. Sage, '00
First Vice-President	J. G. Miller, '07
Second Vice-President	Raye H. Rigney, '11
Secretary	J. A. Anderson, '12
Treasurer	S. R. Mitchell, '09

Class of 1894

Fabian Garcia, B. S., M. S. A., State College, N. M., Director of Experiment Station and Professor of Horticulture, New Mexico College of Agriculture and Mechanic Arts.

Agnes Williams, B. S., (Mrs. Herbert), Roswell, N. M., Housewife.

R. Roy Larkin, B. S., East Las Vegas, N. M., Southwestern Agent of Ginn and Co., Member Board of Regents, New Mexico College of Agriculture and Mechanic Arts.

Lemuel C. McGrath, B. S., Deceased, 1906.

Oscar C. Snow, B. S., Mesilla Park, N. M., Ranchman, and President First National Bank of Las Cruces, N. M.

Class of 1895

Jessie Casad, B. S., (Mrs. C. E. Rhodes), Apartado 30, El Oro, Estado de Mexico, Mexico, Housewife.

Class of 1896

Mae Gilmore, B. S., Alto, N. M., Teaching.

Alfred M. Holt, M. S., Deceased, 1901.

Albert H. Peterson, B. S., 658 East 95th St., Chicago, Ill., Mechanic.

Clarence E. Rhodes, B. S., Apartado 30, El Oro, Estado de Mexico, Mexico, Superintendent Cyanide Department, El Oro Mines.

Class of 1897

Joseph F. Bennett, M. S., La Union, N. M., Ranchman.

Elgin B. Holt, B. S., Magdalena, Sonora, Mexico, Mining Engineer, Member firm, Holt Brothers.

Arthur F. Williams, B. S., Deceased, 1905.

Class of 1898

Edwin E. Casey, B. S., U. S. V., Deceased, 1898.

Duval G. Cravens, B. S., U. S. V., Sewanee, Tenn., Headmaster
Sewanee Military Academy.

Charles E. Mead, B. S., Colton, Cal., Druggist, Mission Drug Store.

Ivah R. Mead, B. S., (Mrs. Shallenberger), Larned, Kan., Housewife.

Isaac H. Stanley, B. S., Santa Rita, N. M., with Chino Copper Co.

William A. Sutherland, B. S., Las Cruces, N. M., Member law firm
of Holt and Sutherland.

Lottie Sweet, B. S., 847 North Broadway, Santa Ana, Calif., School
Principal.

George M. Williams, B. S., Las Cruces, N. M., Farming.

Class of 1899

Edward J. Coe, Venice, Calif., Draughtsman.

Walter E. Holt, B. S., Magdalena, Sonora, Mexico, Mining Engineer,
Member firm, Holt Brothers.

John D. Tinsley, B. S., Brownwood, Texas, Agricultural Demon-

Class of 1900

strator for Gulf, Colorado and Santa Fe Railroad Co.

William Cory Meeker, B. S., Topeka, Kan., Pastor Second Presby-
terian Church.

Charles Lewis Post, M. S., Las Cruces, N. M., Surveyor for Dona
Ana County, and U. S. Deputy Mineral Surveyor.

Archibald Bruce Sage, B. S., M. S., 1911, State College, N. M.,
Professor of Mechanical and Electrical Engineering, New Mex-
ico College of Agriculture and Mechanic Arts.

Halbert E. P. Thomas, B. S., Deceased.

Class of 1901

Leah Nora Newberry, B. S., (Mrs. C. D. Case), 2505 W. Adams,
Chicago, Ill., Housewife.

Minnie Wilson Newberry, B. S., (Mrs. W. A. Sutherland), Las
Cruces, N. M., Housewife.

Matthew Steele, M. S., (Ph. D. Columbia) Columbia, Mo., Assistant
Professor Biological Chemistry, University of Missouri.

Class of 1902

- Theron Catlin Bennett, B. S., 811 16th St., Denver, Colo., The Theron C. Bennett Co., Music Publishers.
- Elizabeth Coleman, B. S., (Mrs. Koger), 522 Madison St., Monterey, Calif., Supervisor Household Economics, Monterey Schools.
- Elizabeth C. Foster, B. S., Las Cruces, N. M., Teaching.
- Frances French, B. S., Las Cruces, N. M., Teaching.
- James Stanislaus Macgregor, M. S., Columbia University, New York, N. Y., Consulting Engineer on Tests of Materials and Instructor in Civil Engineering Department, Columbia University.

Class of 1903

- Fannie Ford, B. S., State College, N. M., Instructor in Mathematics, New Mexico College of Agriculture and Mechanic Arts.
- Maud Elizabeth McFie, B. S., (Mrs. L. B. Bloom), Jemez, N. M., Housewife.
- Orrick B. Metcalf, B. S., La Mesilla, N. M., Apiarist.
- Ina M. Nelson, B. S., (Mrs. J. H. Wiese, 5623 Forty-second Ave., Seattle, Wash., Housewife.

Class of 1904

- Clarence D. Case, B. S. A., 2505 W. Adams, Chicago, Ill., Journalist.
- Lauren W. Case, B. S., Chicago, Ill., Accountant.
- Lute Foster, B. S., State College, N. M., Instructor of Piano, New Mexico College of Agriculture and Mechanic Arts.
- Orpha Bennett Hoblit, B. S., (Mrs. M. L. Hoblit), State College, N. M., Housewife.
- Pearl C. Miller, B. S., (B. S. Drexel Institute, 1906), State College, N. M., Professor Household Economics, New Mexico College of Agriculture and Mechanic Arts.
- Rowena Mott, B. S., (Mrs. Oscar L. Poe), Anthony, N. M., Housewife.

Class of 1905

- Thomas B. Green, B. S. A., Deceased, 1905.
- Annetta May Harney, B. S., (Mrs. O. W. H. Bowers), National City, Calif., Housewife.

Reginald H. Hart, B. S., Medford, Oregon, Farmer.

Benjamin F. Nabours, B. S. in M. E., Holloway, N. M., Forest Service, U. S. D. A.

Rafael Ramirez, B. S. in Ag., Deceased, 1907.

Harry H. Schutz, B. S., (B. S. A. Cornell, 1907), Los Lunas, N. M., Manager, The Southwestern Agricultural Corporation.

Class of 1906

John F. Blinn, B. S., 1028 Church St., Ann Arbor, Mich., Student in Medicine.

Merle Anna Blinn, B. S., (Mrs. U. G. Brown), 20 Parsons St., San Francisco, Calif., Housewife.

John William Boutz, B. S. in Ag., Harris, Sask., Canada, Farming.

Archie A. Brown, B. S. in M. E., Service Building, Fair Grounds, San Francisco, Calif., Assistant Structural Engineer, Panama-Pacific International Exposition.

Ulysses G. Brown, B. S. in M. E., 20 Parsons St., San Francisco, Calif., Engineering Draughtsman, City Engineer's Office.

Jose A. Bruno, B. S. in M. E., Guaymas, Puerto Rico, Planter.

Ruth Coleman, B. S., (Mrs. C. D. Miller), Tularosa, N. M., Housewife.

Guy C. Given, B. S., State College Penn., Assistant in Agricultural Chemistry. (On leave of absence in Gottingen, Germany.)

Earl Addison Graham, B. S. in M. E., 207 Sherbrooke St., Winnipeg, Canada, Erecting Engineer, Canadian Westinghouse Co.

Charles DeWitt Miller, B. S., Tularosa, N. M., Resident Manager Velie Farms Company (48,000 acres).

Bertha Peet, B. S., Williams, Arizona, Teacher of Music.

Class of 1907

Vicente Davila, B. S. in M. E., Sabinas, Mexico, Ranchman.

Ralph B. Deemer, B. S., Lafayette, Ind., Deputy State Chemist, Purdue University.

Allen G. Graham, M. S. A., R. F. D. No. 4, Box 929, Fort Worth, Texas, Stock Farmer.

John George Miller, M. E., 227 Linden Ave., Long Beach, Calif.,

Director of Manual Training, Long Beach Polytechnic High School.

Jose Quintero, B. S. in M. E., State College, N. M., Assistant in Chemistry.

Paul C. Standley, M. S., Washington, D. C., Assistant Curator, Herbarium, U. S. National Museum.

Class of 1908

Dean W. Bloodgood, B. S. in M. E., State College, N. M., Assistant Irrigation Department New Mexico College of Agriculture and Mechanic Arts.

J. Maughs Brown, B. S. in C. E., Professor Civil Engineering, State University, Vermillion, S. Dak.

Phillip Dessauer, B. S. in M. E., Las Cruces, N. M., Captain New Mexico National Guard.

William Endicott, B. S. in M. E., Schnectady, N. Y., General Electric Company.

William W. Gallacher, B. S. in M. E., White Oaks, N. M., Stockman.

George G. Helde, B. S. in M. E., Y. M. C. A., Springfield, Mo., Secretary, Young Men's Christian Association.

Claude P. Henry, B. S., Yazoo City, Miss., Teaching.

H. Cornelius Henry, B. S., Deceased, 1911.

Earl C. Hornbrook, B. S. in M. E., Elm Grove, W. Va., Manager Shipping Department, Trimble and Lutz Co.

Jesse E. Mundell, B. S. in Ag., Tucumcari, N. M., Manager U. S. Dry Farming Experiment Station.

William Pattison, B. S. in M. E., Howard, Mont., Farming.

James Poe, B. S. in Ag., Mesilla Park, N. M., Ranchman.

Wilbur L. Powers, B. S. in Ag., Corvallis, Oregon, Assistant in Drainage and Irrigation, Oregon Agricultural College.

Fernando Quintero, B. S., Las Cruces, N. M., Farmer and Graduate Student, New Mexico College of Agriculture and Mechanic Arts.

James A. Steel, B. S., 106 West 143rd St., New York City, Student in Medicine, College of Physicians and Surgeons, Columbia University.

Jay B. Stoneking, B. S. in M. E., R. F. D. No. 4, Box 929, Fort Worth, Texas, Stock Farmer.

Maggie May Stover, B. S., (Mrs. Reading), Bisbee, Ariz., Housewife.
Jacob A. Sweet, B. S. in C. E., Deseubridora, Durango, Mexico,
Manager Hacienda Pelayo.

Justin R. Weddell, B. S., 1900 Euclid Ave., Cleveland, Ohio, President and General Manager Weddell-Schmidt Advertising Co.

C. P. Wilson, M. S., Mesilla Park, N. M., Station Stenographer, New Mexico College of Agriculture and Mechanic Arts.

Class of 1909

Herbert N. Alleman, B. S. in M. E., Willowbrook, Calif., Business.
A. P. Bjerregaard, B. S., 10724 Kimberley Ave., Cleveland, Ohio,
Chemist, Canfield Oil Co.

Lois M. Friend, B. S. Denver, Colo.

Victor C. Kays, B. S. in Ag., M. S. in Ag., Jonesboro, Ark., Principal State Agricultural School, First District.

S. R. Mitchell, (B. S. Purdue University), M. S., State College, N. M., Assistant Professor of Chemistry, New Mexico College of Agriculture and Mechanic Arts.

J. Leroy Pritchard, B. S., Washington, D. C., Student in Medicine, Georgetown University Medical College.

Herbert Clyde Stewart, B. S. in Ag., Pecos City, Texas, Director State Experiment Sub-Station.

Armando Uranga, B. S. in Ag., San Juan Bautista, Tabasco, Mexico, Chemist, Estacion Agricula Experimental.

Class of 1910

Walter Ames, B. S. in M. E., Engineer, Las Cruces, N. M.

Stuart Knight Baker, B. S. in E. E., Telephone Engineer with Southwestern Telephone and Telegraph Co., 6163 Washington Ave., St. Louis, Missouri.

Howard C. Boone, B. S. in M. E., Los Angeles, Calif., with Westinghouse Electric Co.

Arner G. Eede, B. S., Ballston Spa, N. Y., Business.

Arthur Fraker, B. S. in C. E., Wagon Mound, N. M., Surveyor.

Gordon Goebel, B. S. in E. E., East Pittsburgh, Penn., with Westinghouse Electric Co., Service Dept.

Ruth E. Oliver, B. S., at Home, Ballard, Washington.

Edward L. Redding, B. S. in C. E., Santa Rita, N. M., Assistant with
State Engineer's Office.

Donald W. Young, B. S., Attorney at Law, Las Cruces, N. M.

Class of 1911

William E. Campbell, B. S., 124 W. Second St., Los Angeles, Calif.,
Cutlery Business.

Percy C. Fitzgerald, B. S. in Ag., Sligo, Texas, Farming.

Elsie Raye Hines, B. S., (Mrs. J. W. Rigney), Mesilla Park, N. M.
Housewife.

Bertha A. Mayer, B. S., White Oaks, N. M.

Paul W. Mayer, B. S., El Paso, Texas, Y. M. C. A. Secretary.

Henry C. Cowen, B. S. in Ag., P. O. Box 204, Amarillo, Texas,
Assistant Agricultural Demonstrator, Santa Fe Railroad.

Sewall Egbert Merrill, B. S. in Ag., Escondido, Calif., Teacher of
Agriculture.

John E. Powers, B. S. in C. E., Santa Fe, N. M., Hydrographer,
State Engineer's Office.

George R. Quesenberry, B. S. in Ag., Farmer, Las Cruces, N. M.

Joseph W. Rigney, B. S. in Ag., State College, N. M., Assistant
Professor of Horticulture, New Mexico College of Agriculture
and Mechanic Arts.

Rupert L. Stewart, B. S. in Ag., Graduate Student Cornell University,
Ithaca, N. Y.

Class of 1912

J. A. Anderson, B. S. C., State College, N. M., Publication Editor
and Secretary to the President, New Mexico College of Agri-
culture and Mechanic Arts.

John K. Haggart, B. S. in C. E., Y. M. C. A., Wichita, Kans., Civil
Engineer Wichita Union Terminal.

H. Leslie Hermann, B. S. in M. E., Ray, Arizona, Mining.

Arthur Laferriere, B. S. in Ag., State College, N. M., Assistant
Nutrition Chemist, New Mexico College of Agriculture and
Mechanic Arts.

James Richard Quesenberry, B. S. in Ag., State College, N. M., As-

sistant in Animal Husbandry, New Mexico College of Agriculture and Mechanic Arts.

K. O. Windsor, B. S., Santa Fe, N. M., Contractor and Builder.

Ruth Thompson, B. S. in H. E., State College, N. M., Assistant in Department of Household Economics, New Mexico College of Agriculture and Mechanic Arts.

Class of 1913

Samuel I. Bousman, B. S. in C. E., Hurley, N. M., Engineer with Chino Copper Company.

Ruth I. Brainard, B. S. in H. E., Teacher in City Schools, Artesia, N. M.

Charles C. Briggs, B. S., Teacher in Claremont School for Boys, Claremont, Calif.

Cassius L. Clay, B. S., 431 Royal St., New Orleans, Louisiana, Chemist in Government Pure Food Laboratory.

Moises R. Diaz, B. S. in Ag., Ranchman, Saltillo, Coahuila, Mexico.

Ada L. Hoagland, B. S. in H. E., Teacher in City Schools, Las Cruces, N. M.

J. William Knorr, B. S. in Ag., County Agricultural Expert, Sterling, Colo.

Carrie Padon Phelps, B. S. in H. E., Postmistress, State College, N. M.

Herbert G. Smith, B. S. in Ag., Tucumcari, N. M., Assistant in Dry-Land Agriculture, United States Department of Agriculture.

Leonard G. Thomas, B. S. in C. E., Civil Engineering Work at Mount Vernon, Ohio.

Earl J. Wilson, B. S. in Ag., Acting Steward, N. M. I. A. Hospital, East Las Vegas, N. M.

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**NEW MEXICO
COLLEGE OF
AGRICULTURE
AND
MECHANIC
ARTS**

1916--17

COLLEGE RECORD

Volume 9

MAY 1916

Number 4

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of Agriculture and
Mechanic Arts

STATE COLLEGE, NEW MEXICO

Catalog for
1915-1916

Announcement for
1916-1917

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Las Cruces, N. M.
1916

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CALENDAR

1916

July							August							September						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	1	1	2	3	4	5	1	2
2	3	4	5	6	7	8	6	7	8	9	10	11	12	3	4	5	6	7	8	9
9	10	11	12	13	14	15	13	14	15	16	17	18	19	10	11	12	13	14	15	16
16	17	18	19	20	21	22	20	21	22	23	24	25	26	17	18	19	20	21	22	23
23	24	25	26	27	28	29	27	28	29	30	31	..	..	24	25	26	27	28	29	30
30	31	..	..	..	..	..									

October							November							December						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	..	..	..	1	2	3	4	..	..	..	..	..	1	2
8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
29	30	31	..	..	..	..	26	27	28	29	30	..	..	24	25	26	27	28	29	30
														31						

1917

January							February							March						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	1	2	3	4	5	6	..	..	..	..	1	2	3	..	..	..	..	1	2	3
7	8	9	10	11	12	13	4	5	6	7	8	9	10	4	5	6	7	8	9	10
14	15	16	17	18	19	20	11	12	13	14	15	16	17	11	12	13	14	15	16	17
21	22	23	24	25	26	27	18	19	20	21	22	23	24	18	19	20	21	22	23	24
28	29	30	31	..	..	..	25	26	27	28	..	..	..	25	26	27	28	29	30	31

April							May							June						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	..	..	1	2	3	4	5	..	..	..	..	..	1	2
8	9	10	11	12	13	14	6	7	8	9	10	11	12	3	4	5	6	7	8	9
15	16	17	18	19	20	21	13	14	15	16	17	18	19	10	11	12	13	14	15	16
22	23	24	25	26	27	28	20	21	22	23	24	25	26	17	18	19	20	21	22	23
29	30	..	..	..	..	..	27	28	29	30	31	..	..	24	25	26	27	28	29	30

COLLEGE CALENDAR

1916-17

August 30, Wednesday, First Semester begins.

Faculty Meeting, 10 A. M.

Registration begins, 1 P. M.

August 31, Thursday, Registration, from 9 A. M. to 4 P. M.

Special and Entrance Examinations.

September 1, Friday, Class Work begins, 8:15 A. M.

October 30-31, Monday and Tuesday, Quarterly Examinations for Preparatory Department.

November 30, Thursday, Thanksgiving Day.

December 21-January 3, Christmas Vacation.

January 4, Thursday, Regular Class Work resumed.

January 8, Monday, Six Weeks' Winter Course in Agriculture begins.

January 8-13, Monday-Saturday, Farmers' Week.

January 15-17, Monday, Tuesday and Wednesday, Semester Examinations.

January 18, Thursday, Second Semester begins.

Registration, from 9 A. M. to 4 P. M.

January 19, Friday, Class Work begins, 8:15 A. M.

March 19-20, Monday and Tuesday, Quarterly Examinations for Preparatory Department.

May 18-22, Friday, Monday and Tuesday, Semester Examinations.

May 20, Sunday, Baccalaureate Sermon, 11 A. M.

May 23, Wednesday, Closing Exercises of Preparatory Department, 10 A. M.

Senior Class-Day Exercises, 2 P. M.

Alumni Banquet, 8 P. M.

May 24, Thursday, Commencement Exercises, 10 A. M.

Alumni Business Meeting, 2 P. M.

BOARD OF REGENTS.

J. H. PAXTON, President, Las Cruces.

P. F. McCANNA, Secretary and Treasurer, Albuquerque.

C. W. GERBER, M. D., Las Cruces.

R. R. LARKIN, East Las Vegas.

J. A. MAHONEY, Deming.

EX-OFFICIO MEMBERS.

HON. W. C. McDONALD, Governor of New Mexico, Santa Fe.

HON. A. N. WHITE, State Superintendent of Public Instruction, Santa Fe.

FACULTY

OFFICERS OF ADMINISTRATION AND INSTRUCTION.

GEORGE EDGAR LADD, President.

FABIAN GARCIA, Director of the Experiment Station.

ABRAHAM C. COOLEY, Director of Extension Service.

R. V. WARE, Registrar.

EUGENE PETER HUMBERT, Dean of Agriculture.

ARTHUR FRANKLIN BARNES, Dean of Engineering.

MARY FRANCES WINNINGHAM, Dean of Women.

SHERMAN BROWN NEFF, Head of Preparatory Department.

FACULTY AND ADMINISTRATIVE EMPLOYEES.

GEORGE EDGAR LADD, Ph. D., President and Professor of Geology.

A. B., Harvard University, 1887; A. M., *ibid.*, 1888; Ph. D. *ibid.*, 1894; student University of Munich, 1894-1895; Assistant in Geology, Harvard, 1892-1894; Instructor in Geology, *ibid.*, five summers; U. S. Geological Survey two years; President Missouri School of Mines, 1897-1907; President Oklahoma School of Mines, 1908-1913; President and Professor of Geology New Mexico College of A. and M. A., 1913—

CLARENCE TURPIE HAGERTY, M. S., Professor of Mathematics and Astronomy.

B. S., Notre Dame University, 1890; M. S., *ibid.*, 1895; Graduate student, Harvard University, summer, 1891; Professor of Mathematics, and Astronomy, New Mexico College of A. and M. A., 1891—

LUTHER FOSTER, M. S. A., Professor of Animal Husbandry.

B. S., Iowa State College, 1872; M. S. A., *ibid.*, 1886; Superintendent of Schools, Monticello, Ia., 1873-1883; Superintendent of Schools, Jones County, Ia., 1883-1885; Professor of Agriculture, South Dakota Agricultural College, 1885-1893; Director of South Dakota Experiment Station, 1890-1893; Professor of Agriculture and Botany, Montana State College, 1893-1896; Director of Experiment Station and Professor of Agriculture, Utah Agricultural College, 1896-1900; Professor of Agriculture and Horticulture, Wyoming State University, 1900-1901; President New Mexico College of A. and M. A. and Director of Experiment Station, 1901-1908; Director of Experiment Station and Dean of Agriculture, 1908-1913; Professor of Agriculture, 1913-1914; Professor of Animal Husbandry, 1914—

FABIAN GARCIA, M. S., Director of the Experiment Station and Professor of Horticulture.

B. S., New Mexico College of A. and M. A., 1894; M. S., *ibid.*, 1905; Graduate student, Cornell University, 1899-1900; Assistant and Assistant Professor of Agriculture and Horticulture, New Mexico College of A. and M. A., 1894-1904; Professor of Horticulture, *ibid.*, 1904; Director of Experiment Station, 1913—

JOHN HENRY VAUGHAN, A. M., Professor of History and Political Science.

A. B., University of North Carolina, 1904; A. M., *ibid.*, 1905; Principal of Roswell High School, 1906-1907; Graduate student, Summer School of the South, 1907; Professor of History and English, New Mexico Normal University, 1907-1909; Professor of History and Political Science, New Mexico College of A. and M. A., 1909—

*EUGENE PETER HUMBERT, Ph. D., Dean of Agriculture and Professor of Agronomy.

B. S. A., Iowa State College, 1906; M. S., Cornell University, 1908; Ph. D., Cornell University, 1910; Instructor in Farm Crops, Iowa State College, 1906-1907; Expert and Plant Physiologist for U. S. Department of Agriculture, 1908-1910; Associate Biologist, Maine Agricultural Experiment Station, 1910-1911; Professor of Agronomy, New Mexico College of A. and M. A., January 1, 1912-1915; Dean of Agriculture and Professor of Agronomy, 1915—

ARTHUR FRANKLIN BARNES, B. S., Dean of Engineering and Professor of Mechanical Engineering.

B. S. in M. E., Worcester Polytechnic Institute, 1908; Instructor in Mechanical Engineering, University of Pennsylvania, 1908-1913; Efficiency Engineer, Reed & Prince Mfg. Co., 1908 and 1910; Three summers with City of Worcester; Professor of Engineering, Middlebury College, 1913-1914; Dean of Engineering and Professor of Mechanical Engineering, New Mexico College of A. and M. A., 1914—

FREDERICK LOUIS BINBY, B. S., Irrigation Engineer.

B. S. in C. E., University of California, 1904; Assistant Engineer with Oregon Short Line R. R., 1905-1907; Civil Engineer, Salt Lake City, 1907-1908; Irrigation Engineer with Office of Irrigation Investigations, U. S. Department of Agriculture, 1908-1910; Professor of Civil and Irrigation Engineering, New Mexico College of A. and M. A., 1910-1914; Irrigation Engineer in co-operation with U. S. Department of Agriculture, 1910—

PEARL CHERRY MILLER, B. S., Professor of Household Economics.

B. S., New Mexico College of A. and M. A., 1904; B. S., Drexel Institute, 1906; Instructor in Domestic Science, Sherman Institute, Riverside, Cal., 1907-1910; Professor of Household Economics, New Mexico College of A. and M. A., 1910—

*Resigned.

MARION SHIRLEY BOWEN, Professor of Practical Mechanics.

Graduate Miller School, Virginia, 1901; Machinist Providence Engineering Company, Providence, R. I., 1901-1902; Machinist Brown & Sharp Mfg. Company, 1902-1904; Instructor in Shop Work, University of Missouri, 1904-1909; Professor of Practical Mechanics, Oklahoma School of Mines and Metallurgy, Wilburton, Okla., 1912-1914; Professor of Practical Mechanics, New Mexico College of A. and M. A., 1914—

FREDERICK WALDEMAR CHRISTENSEN, M. S., Nutrition Chemist.

B. S., Kansas State Agricultural College, 1900; Graduate student, *ibid.*, 1903-1904; Assistant Expert in Animal Nutrition, Bureau of Animal Industry, U. S. Department of Agriculture, 1904-1905; Assistant in Animal Nutrition, Pennsylvania State College, 1905-1908; M. S., *ibid.*, 1908; Graduate student, University of Chicago, 1908; Graduate student, Yale University, 1908-1909; Assistant in Animal Nutrition, Pennsylvania State College, 1909-1910; Associate Professor of Chemistry in charge of experimental work in Animal Nutrition, New Mexico College of A. and M. A., 1910-1914; Nutrition Chemist, 1914—

GEORGE PATRICK STOCKER, B. S., Associate Professor of Mathematics and Civil Engineering.

Graduate Plattsville, Wis., State Normal, 1902; B. S. in C. E., University of Wisconsin, 1909; Assistant Professor of Mathematics and Civil Engineering, New Mexico College of A. and M. A., 1909-1913; Assistant Professor of Civil Engineering, 1913-1914; Associate Professor of Civil Engineering, 1914—

RALPH WILLIS GODDARD, B. S., Professor of Electrical Engineering.

Electrical Contractor, Worcester, Mass., 1905-1911; B. S. in E. E., Worcester Polytechnic Institute, 1911; Estimator on Building Construction, Gascoigne & Shattuck, Boston, Mass., 1911-1913; Instructor in Electrical Engineering, University of Nebraska, 1913-1914; Professor of Electrical Engineering, New Mexico College of A. and M. A., 1914—

SAMUEL PRUITT HERREN, 1st Lieutenant U. S. Army, Retired, Professor of Military Science and Tactics.

DAYTON EUGENE MERRILL, M. S., Professor of Biology.

B. S., State University of Iowa, 1907; M. S., *ibid.*, 1910; Instructor in Biology, Boone, Iowa, High School, 1907-1908; Fellow in Zoology, State University of Iowa, 1909-1911; Assistant in Zoology, summer sessions, *ibid.*, 1910 and 1911; Assistant Professor of Biology, New Mexico College of A. and M. A., 1911-1915; Professor of Biology, 1915—

SHERMAN BROWN NEFF, Ph. D., Professor of English and
Head of Preparatory Department.

A. B., Yale University, 1908; A. M., *ibid.*, 1909; A. M., Harvard University, 1910; Ph. D., *ibid.*, 1915; Instructor in English, Colby College, Waterville, Maine, 1911-1912; Head of English Department, Salem Classical and High School, Salem, Mass., 1912-1913; Professor of English, New Mexico College of A. and M. A., 1914-1915; Professor of English and Head of Preparatory Department, 1915—

MARY FRANCES WINNINGHAM, A. B., Dean of Women and
Instructor in Mathematics and History.

A. B., Arcadia College; Student Cape Girardeau, Mo., Normal School; Principal of High School, West Plains, Mo., 1900-1910; Superintendent of Schools, West Plains, 1910-1911; Dean of Women and Instructor in Mathematics and Latin, New Mexico College of A. and M. A., 1911-1915; Dean of Women and Instructor in Mathematics and History, 1915—

CLARENCE WILLIAM RUSSELL, B. S., Professor of Physical
Education and Director of Athletics.

B. S., University of Chicago, 1908; Football Coach, University of West Virginia, 1907; Football Coach, Colorado School of Mines, 1908; Assistant Football and Track Coach, University of Chicago, 1909; Director of Athletics, Long Beach, Cal., High School, 1910-1913; Professor of Physical Education and Director of Athletics, New Mexico College of A and M. A., 1914—

LOUIS ALLEN HIGLEY, Ph. D., Professor of Chemistry.

A. B., Ohio Northern University, 1896; A. M., *ibid.*, 1899; Ph. D., University of Chicago, 1907; Public Schools, Ohio, 1889-1894; Private Academy and College, Illinois, nine years; Chief Chemist, the Kennicott Company, Chicago, 1908-1909; Chief Chemist, the Centralia Mining Company, Guadalajara, Mexico, 1909-1911; Professor of Chemistry, Westminster College, Missouri, 1911-1915; Professor of Chemistry, New Mexico College of A. and M. A., 1915—

*CHARLES BERRY NEWCOMER, Ph. D., Professor of Latin and
Modern Languages.

A. B., University of Nebraska, 1889; A. M., *ibid.*, 1890; Ph. D., University of Berlin, 1899; Student, University of Berlin, 1890-1891, 1895-1899; Student, American School of Archaeology, Athens, 1904-1905; Fellow in Romance, University of Chicago, 1913-1915; Professor of Greek and Latin, Cotner University, 1891-1893; Master of French and German, Belmont School, 1893-1895; Acting Assistant Professor of Latin, University of Missouri, 1899-1901; Professor of Greek and Instructor in French, Drury College, 1901-1904; Instructor, University of Michigan, 1905-1908; Professor, Transylvania University, 1908-1910; Professor of Romance Languages, Drake University, 1910-1913; Professor of Latin and Modern Languages, New Mexico College of A. and M. A., 1915—

*In place of M. L. Hoblitt, on leave of absence, 1915-1916.

CHARLES HENRY KUNSMAN, M. S., Professor of Physics.

Graduate Pennsylvania State Normal, East Stroudsburg, Pa., 1910; B. S. Pennsylvania State College, 1914; M. S. in Physics, University of California, 1915; Student Assistant in Physics, Pennsylvania State College, 1912-1914; Assistant in Physics, summer session, *ibid.*, 1912-1914; Assistant in Physics, University of California, 1914-1915; Professor of Physics, New Mexico College of A. and M. A., 1915—

MIGUEL BOLANOS CACHO, Professor of Spanish.

Secretary of the Federal Tribunal, Chihuahua; Counsellor of Law and President of Educational Commission, Chihuahua; Professor of Spanish and Rhetoric, Chihuahua Institute; Professor of Spanish, New Mexico College of A. and M. A., 1915—

RUPERT LYONEL STEWART, M. S., Professor of Agronomy.

B. S., New Mexico College of A. and M. A., 1911; M. S., Cornell University, 1914; Instructor in Animal Husbandry, New Mexico College of A. and M. A., 1914-1915; Professor of Agronomy, 1915—

FREDERICK CONRAD WERKENTHIN, A. M., Instructor in Botany and Plant Pathology.

A. B., University of Texas, 1915; A. M., *ibid.*, 1915; Assistant in Botany, University of Texas, 1912-1913; Assistant in Agriculture, summer session, *ibid.*, 1913; Assistant in Bacteriology, *ibid.*, 1913-1915; Instructor in Botany and Plant Pathology, New Mexico College of A. and M. A., 1915—

ZOE DONALDSON, A. M., Instructor in English.

A. B., University of Minnesota, 1912; A. M., *ibid.*, 1914; Teaching Assistant in Rhetoric, University of Minnesota, 1912-1913; Shevlin Fellow in English, *ibid.*, 1913-1914; Assistant in English, *ibid.*, 1914-1915; Instructor in English, New Mexico College of A. and M. A., 1915—

HELEN IDA THISSELL, Instructor in Household Economics.

Graduate, Miss Forehand's School of Domestic Science, Boston, Mass., 1904; Graduate, Boston Cooking School course, Simmons College, Boston, Mass., 1906; Superintendent of Domestic Art, Public Schools, Clinton, Mass., 1908-1911; Instructor in Domestic Science and Art, Public schools, Springfield, Mass., 1911-1913; Instructor in Domestic Art, Longfellow Evening School, Denver, Colorado, 1914-1915; Instructor in Household Economics, New Mexico College of A. and M. A., 1915—

RAYMOND MATTHEW, B. S., Instructor in Irrigation Engineering.

B. S. in C. E., University of California, 1915; Instructor in Irrigation Engineering, New Mexico College of A. and M. A., 1915—

EDWARD HEBER DIVELBISS, B. S., Instructor in Horticulture

B. S., Colorado Agricultural College, 1914; Instructor in Horticulture, New Mexico College of A. and M. A., 1914—

JAMES RILEY MEEKS, B. S., Instructor in Animal Husbandry.

B. S., Purdue University, 1914; Instructor in Animal Husbandry, New Mexico College of A. and M. A., 1914—

ORRIC BAYLOR METCALF, M. S., Instructor in Practical Mechanics.

B. S., New Mexico College of A. and M. A., 1903; M. S., *ibid.*, 1904; Instructor in Practical Mechanics, New Mexico College of A. and M. A., 1914—

ARNOLD ZANE SMITH, B. S., Instructor in Agronomy.

B. S., Oregon Agricultural College, 1914; Instructor in Agronomy, New Mexico College of A. and M. A., 1916—

R. V. WARE, Registrar.

Assistant Registrar, New Mexico College of A. and M. A., 1914-1915; Registrar, 1915—

BERNICE JACK SKINNER, A. B., Assistant Registrar and Instructor in Commerce.

A. B., University of Arkansas, 1913; Assistant Registrar and Instructor in Commerce, New Mexico College of A. and M. A., 1915—

FLOY EDNA FRENCH, Librarian.

Student New Mexico College of A. and M. A., 1893-1897; Graduate Commercial Department, 1897; Librarian Branch Delivery Station, Public Library, Chicago, 1901-1905; Librarian, New Mexico College of A. and M. A., 1914—

EDA LOU WALTON, Instructor in Instrumental Music.

DEAN WARD BLOODGOOD, B. S., Assistant Irrigation Engineer.

B. S. in M. E., New Mexico College of A. and M. A., 1908; Assistant in Irrigation, 1912-1915; Assistant Irrigation Engineer, 1915—

JOSE QUINTERO, B. S., Assistant in Chemistry.

B. S. in M. E., New Mexico College of A. and M. A., 1907; Assistant in Chemistry, 1911—

JAMES THEODORE BARLOW, B. S., Assistant in Agronomy.

B. S. in Ag., University of Missouri, 1915; Assistant in Agronomy, New Mexico College of A. and M. A., 1915—

BURTON ARRA FITE, B. S., Assistant in Horticulture.

B. S., in Ag., New Mexico College of A. and M. A., 1915; Assistant in Horticulture, 1915—

JAMES GUY HAMILTON, B. S., Assistant in Agronomy.

B. S., in Ag., New Mexico College of A. and M. A., 1915; Assistant in Agronomy, 1915—

KENNETH CONE BREWSTER, B. S., Assistant in Biology.

B. S., New Mexico College of A. and M. A., 1915; Assistant in Botany, 1916—

EDWARD JACKSON MAYNARD, B. S., Assistant in Animal Husbandry.

B. S., in Ag., New Mexico College of A. and M. A., 1915; Assistant in Animal Husbandry, 1915—

ROYAL BURLEIGH THOMPSON, B. S., Assistant in Animal Husbandry.

B. S., Washington State College, 1914; Assistant in Animal Husbandry, New Mexico College of A. and M. A., 1916—

RUTH FLORENCE BROWNLEE, Secretary to the President.

ARETUS HICKS BRADLEY, Stenographer Experiment Station.

MAE RICKETSON, Stenographer Registrar's Office.

MILDRED FULGHUM, Assistant in English.

LEVI STANLEY BROWN, Assistant in Chemical Laboratory.

HOMER PATRICK POWERS, Assistant in Chemical Laboratory.

EDWIN CONDIT HOLLINGER, Assistant Librarian.

IVINS ROGERS TILTON, Matron Girls' Dormitory.

WILLIAM CHARLES WEIR, Custodian of Buildings.

EXTENSION SERVICE STAFF.

ABRAHAM C. COOLEY, B. S., Director of Extension Work.

B. S., Utah Agricultural College, 1911; Head of Department of Agriculture, Jordan High School, Utah, 1911-1912; Head of Department of Agriculture, Ogden High School, Utah, 1912-1913; Agricultural County Agent, Colorado, 1913-1914; Director of Extension Work and State Leader of County Agents, New Mexico College of A. and M. A., 1914—

WILLIAM THOMAS CONWAY, B. S., State Leader in Boys' and Girls' Club Work.

A. B., Ouachita College, 1894; B. S., Oklahoma A. and M. College, 1910; Principal of Prep. Department, Kendall College, 1898-1902; Vice President of Indianola College, 1902-1905; Principal of High School, Sulphur, Okla., 1906-1909; Superintendent of Extension Department, New Mexico College of A. and M. A., 1911—

ROBERT WOOD LATTA, B. S., State Leader in Dairy Work.

B. S., Purdue University, 1908; State Leader in Dairy Work, New Mexico College of A. and M. A., 1914—

GAIL RITCHIE, B. S., State Leader in Home Economics.

B. S., University of Missouri, 1915; State Leader in Home Economics, New Mexico College of A. and M. A., 1916—

CLARENCE PENDLETON WILSON, M. S., Extension Secretary and Editor of Agricultural Publications.

B. S., New Mexico College of A. and M. A., 1908; M. S., 1911; Extension Stenographer, 1911-1915; Extension Secretary and Editor of Agricultural Publication, 1915—

JOSEPH HARRINGTON TOULOUSE, Assistant State Leader in Boys' and Girls' Club Work.

ONIS LONGBOTTOM, Extension Stenographer.

JOSEPH WHEELER RIGNEY, B. S., Chaves County Agricultural Agent.

B. S., in Ag., New Mexico College of A. and M. A., 1911.

VERE LORRAINE MARTINEAU, B. S., Colfax County Agricultural Agent.

B. S. in Ag., Agricultural College of Utah, 1912.

PAUL BROWN BARBER, B. S., Dona Ana County Agricultural Agent.

B. S. in Ag., Michigan Agricultural College, 1912.

MANRIQUE RODRIGUEZ GONZALEZ, B. S., San Miguel and Mora County Agricultural Agent.

B. S. in Ag., Agricultural College of Utah, 1912.

JOHN WILLIAM KNORR, B. S., Eddy County Agricultural Agent.

B. S. in Ag., New Mexico College of A. and M. A., 1913.

ROLAND HARWELL, Torrance County Agricultural Agent.

HERBERT CLYDE STEWART, B. S., Bernalillo County Agricultural Agent.

B. S. in Ag., New Mexico College of A. and M. A., 1909.

*PIERRE DUANE SOUTHWORTH, B. S., Luna County Agricultural Agent.

B. S. in Ag., University of Minnesota, 1907.

*Resigned.

HISTORICAL SKETCH

In 1889, Las Cruces College was organized by Professor Hiram Hadley. This furnished the nucleus of the College of Agriculture and Mechanic Arts, which opened its doors for its first session on March 10, 1890, with Professor Hadley as its first president.

The New Mexico College of Agriculture and Mechanic Arts is one of about fifty "land grant colleges" established in the several states of the Union in accordance with the provisions of an act of Congress approved July 2, 1862, commonly known as the Morrill Act. This historic measure marked the beginning of a new era in education. The purpose and scope of the institutions which were to be established under this act are set forth in the words of the act, which provides for a grant of land to each state for the establishment and maintenance of "at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." These colleges then were to offer both "liberal and practical education," both cultural and professional training, for the benefit of the industrial classes, the people who work.

On February 28, 1889, the 28th Legislative Assembly of New Mexico passed an act establishing the College and accepting for it the appropriations which had been made by Congress. The act further defined the character and purposes of the institution. It "shall be non-sectarian in character, devoted to practical instruction in agriculture, mechanic arts and natural sciences connected therewith, as well as a thorough course of instruction in all branches of learning bearing upon agricultural and industrial pursuits. The course of instruction of the

college hereby created shall embrace the English language, literature, mathematics, philosophy, civil engineering, chemistry, animal and vegetable anatomy and physiology, the veterinary art, entomology, geology, political, rural and household economy, horticulture, moral philosophy, history, mechanics, and such other sciences and courses of instruction as shall be prescribed by the regents."

By its further act of February 26, 1891, the legislature of New Mexico accepted the congressional appropriation of 1890 and accepted and consented to all the terms and conditions upon which it was made, including the principle that the Territory should make adequate provision for buildings, grounds, and general expenses of maintenance, while the funds received from the federal government are to be applied to the maintenance of the Experiment Station and to the cost of instruction and the facilities for instruction in certain specified branches.

LOCATION.

The New Mexico College of Agriculture and Mechanic Arts is located at Mesilla Park, New Mexico, in the Rio Grande Valley, in the central-southern part of the State. The College buildings are about one mile from the Mesilla Park railway station, and about two and one-half miles from the town of Las Cruces, county seat of Dona Ana county, and forty miles north of El Paso, Texas. The main line of the A. T. & S. F. Railway from Chicago to El Paso runs through the College property.

This region, known as the Mesilla Valley, is one of the richest agricultural districts in New Mexico. There are twenty-five thousand acres of land under irrigation within ten miles of the College. All of this land is under the great Elephant Butte Dam and Engle Reservoir, which when completed, at an estimated cost of \$8,000,000, will be the greatest work yet undertaken by the United States Reclamation Service.

The College has its own post office, the name of which is State College, New Mexico. The railroad, express, and telegraph address is Mesilla Park, New Mexico.

INCOME

The following funds constitute the income of the College:

FROM THE UNITED STATES GOVERNMENT:

Morrill Fund, \$50,000 a year. This is expended under the supervision of the United States Commissioner of Education, and is available only for instruction in Agriculture, the Mechanic Arts, the English language, and the various branches of mathematical, physical, natural, and economic sciences, with special reference to their application in the industries of life, and to the facilities of the institution.

Hatch Fund, \$15,000 a year, for the support of the Agricultural Experiment Station, "to pay the necessary expenses of conducting investigations and experiments, and printing and distributing the results."

Adams Fund, \$15,000 a year, for the Experiment Station for research work of distinct originality and scientific value. The Hatch and Adams funds are expended under the supervision of the Office of Experiment Station of the United States Department of Agriculture.

The College will receive during the fiscal year of 1915-16 an appropriation of \$13,413 from the Smith-Lever Agricultural Extension Bill, which became a law during May, 1914. This fund, which is expended entirely for extension and demonstration work, has been increased by Federal and State appropriations and should reach approximately \$64,000 in 1922.

FROM THE STATE:

The appropriation for maintenance for the fiscal year beginning December 1, 1916, is \$30,000; for Experiment Station, \$5,000; for Extension Work, \$3,400.

In addition to the above sources of income, the College receives a few thousand dollars annually from the sale of farm products, tuition fees of non-resident students, etc., and about one thousand dollars as interest on permanent funds. The College has an endowment of 250,000 acres of land granted by Congress under the acts of 1898 and 1910, but at present derives no income from this source.

EDUCATIONAL PURPOSE.

The purpose of this institution is expressed in the words, "liberal and practical education." The aim is to teach the student those things which make for intelligent manhood and citizenship, and also to give him some special training which will enable him to earn a living. All the courses contain both cultural and technical work. The purpose of the technical and industrial work is to teach him to make a better living; the purpose of all the work, both technical and cultural, is to teach him to live a richer and more useful life.

ORGANIZATION.

The work and functions of the College fall into three grand divisions,—instructional service, experiment station service, and extension service. The instructional service, involving the greater part of the educational work carried on at the College, embraces the College, Preparatory, Industrial, and Trades courses. The College proper comprises the School of Agriculture, the School of Engineering, and the School of General Science. The Department of Household Economics is listed in this catalog as a division of the School of Agriculture. The School of Agriculture and the School of Engineering are under the immediate management of their respective Deans; the Experiment Station and the Extension Service are likewise each under the supervision of a Director; but the educational policy of the institution, in matters of general concern, is directed by the President and the faculty as a whole.

COLLEGE COURSES.

The College offers seven regular courses of study, extending through four years, and leading to the degree of Bachelor of Science. They are:

- I Agriculture.
- II Household Economics.
- III Civil Engineering.
- IV Electrical Engineering.
- V Irrigation Engineering.
- VI Mechanical Engineering.
- VII General Science.

These courses presuppose a full high-school training for entrance. With the exception of the General Science, they are professional courses. Each of them includes a thorough grounding in the fundamental sciences, a certain amount of general cultural work in English, history, economics and languages, and a large amount of both theoretical and practical work in the special subject of the course. We expect those who complete these courses to be men and women of broad general education, with full technical equipment for the work of their several professions.

COLLEGE PREPARATORY.

The College Preparatory comprehends the equivalent of the work done in a four years' high school course. The scarcity of good high schools in New Mexico makes it necessary to offer such a course for the benefit of students preparing for college. It is not the purpose of this department to attract students away from the schools of their home towns, but to provide a standard preparatory course with a high grade of instruction and equipment for students who do not find these facilities at home.

This department offers in addition to courses preparatory to college entrance, a very liberal range of work to that large body of young people who seek training for practical ends and whose preparation will not extend beyond the work of the high school. The program of studies, given on another page, is administered in accordance with the following plan:

All those who expect to graduate from the preparatory department will be required to complete at least fifteen units, each unit equivalent to a course extending through a school year in classes meeting four or five times a week. All are required to take four units of English, two units of history and civics, one unit of mathematics, and one unit of general science. Those preparing for entrance to college courses in Agriculture must take, additionally, one unit of plane geometry; those preparing for entrance to college courses in Household Economics must elect one unit of plane geometry and one unit of elementary chemistry; those preparing for entrance to other college courses must elect one unit of plane geometry, one half unit of solid geometry, and one half unit of advanced algebra. The remainder of the work necessary to complete the minimum of fifteen units may be freely elected; but students who intend to pursue college courses in Agriculture or Household Economics should not elect the subjects offered from those courses to students in the preparatory department.

The number of individual four-year courses leading to college entrance, owing to this freedom of election, is potentially very large; while the possibilities open to those who are not preparing for college are still more numerous. To the student seeking training for immediately practical ends, four main lines of work are offered, namely:

(a) Courses in the elements of agriculture—livestock, plant propagation, farm motors and machinery, field crops and gardening.

(b) Courses in household arts and science—sewing, cooking, household accounts.

(c) Courses in business education—typewriting, stenography, business English, commercial geography, commercial arithmetic and commercial law.

(d) Courses for those expecting to teach—drawing and manual training, elementary psychology, rural education, elements of agriculture and home economics.

Admission to regular enrollment in the preparatory department is granted only to those who have satisfactorily completed the work of the eighth grade of the public schools.

INDUSTRIAL COURSES.

In addition to the regular college and preparatory courses outlined above, the following industrial courses are offered:

- I Industrial Course in Agriculture.
- II Industrial Course in Mechanics.
- III Industrial Course in Domestic Science.
- IV Industrial Course in Business.
- V Six Weeks' Winter Course in Agriculture.

These industrial courses are of high-school grade. They are intended for the boy or girl who does not expect to enter college, but wants something of more practical value than the ordinary high school provides. They are all practical in nature. They are not preparatory in the sense of being designed to meet entrance requirements for higher courses. They are intended especially for students who expect to go no further. Those who expect to enter college are urged to take the regular college preparatory course.

A student who finishes the Industrial Course in Agriculture ought to be a practical and intelligent farmer. He will not be a profound specialist in agriculture, but he ought to be able to manage a farm by modern methods and make money, and he ought furthermore to be an intelligent and useful citizen and a helpful member of society.

The object of the Industrial Course in Mechanics is to enable young men who cannot comply with the ordinary entrance requirements, to still derive benefit from our school. No specific course is outlined for these students but rather courses are arranged to suit the ability and needs of the individual.

The student may take one or two years of this work, and for satisfactory completion of any subject or subjects a certificate will be issued.

The principal subjects taught are gasoline engines, automobiles, forging and carpentry. Some machine shop work may, however, be acquired, as well as actual experience in plumbing and tinning, tool-making, grinding, and tempering.

Our plan is to keep to the practical with this type of student. For instance, no lengthy study or discussions will be given as to the principles involved in the different makes of gasoline engines, but rather the aim will be to teach the student why a stalled engine will not run, or what is the matter with an automobile which will not go, and how to make it go.

An effort will be made to allow each student to choose the line on which to spend most of his time, but the instructor reserves the right to require of any student that he give part of his time to such other subjects as might make of him a more efficient workman in the branch upon which he wishes to specialize. For example, a student taking automobile repair work, may be required to take forge work.

The Industrial Course in Domestic Science aims to teach a girl how to cook plain, wholesome meals, sew, care for the sick, furnish a house, maintain sanitary conditions, and manage in an artistic and economical way the affairs of a household.

The Industrial Course in Business again stresses the practical side of the student's education. It involves the study of stenography, typewriting, business English, commercial arithmetic, commercial geography and commercial law. Some attention is

given to Spanish as well as English stenography. The demand for competent stenographers who can take dictation and conduct correspondence in both English and Spanish is greatly in excess of the supply. Students who wish to begin the course in stenography must be at least sixteen years of age, and must have a good English education. A full high school course is desirable. A mere knowledge of stenography does not make a successful stenographer. Nine-tenths of the poor stenographers are inefficient because of a lack of general education, and especially because of the lack of a thorough knowledge of the English language.

The Six Weeks' Winter Course in Agriculture, beginning January 8, 1917, has been established to meet the demand of those New Mexico farmers and their sons who are unable to avail themselves of the other courses in Agriculture offered by the College. There are a number of young men in this State who are so situated that it is impossible for them to be absent from their homes during the nine months of the college year, but yet who desire some training in the principles of Agriculture. There are also mature men who are past the usual school age, but are ambitious to become familiar with the most recent agricultural thought and practices.

With this general thought in mind this course has been planned and offers an opportunity for these men and boys to become familiar with the latest results in research and their practical application to work on the farm. There will be no maximum age limit in this course, but boys under high school age will not be admitted.

A large amount of instruction will be crowded into a brief period, all of which will be practical in nature, consisting of demonstration lectures and laboratory work. This instruction will cover the following branches: Agronomy, including work in grain judging, crop rotations, seed treatment, farm accounts, soils, and field machinery; Animal Husbandry, including work in stock judging, stock feeding, animal breeding, dairying,

live stock management, and home curing of meats; Horticulture, including work in fruit growing, pruning, spraying, canning, vegetable gardening, and insects; Practical Mechanics, including work in wood turning, farm carpentry, forging and automobile repair.

ONE YEAR TRADES COURSES.

To meet the needs of young men who wish short practical courses but may not be able to meet the ordinary entrance requirements, a one year's course is offered. Students in this course will spend the morning in classes in arithmetic and English suited to their needs. The entire afternoon is devoted to shop instruction, given by a competent workman. A knowledge of English is not required for entrance, but applicants must be at least sixteen years old.

COURSE FOR STUDENTS WISHING TO STUDY MEDICINE

A two years' college course for students who wish to meet the admission requirements of medical schools will be offered, beginning in the fall of 1916.

REQUIREMENTS FOR ADMISSION.

COLLEGE COURSES. For entrance to the Freshman class in any of the college courses, a student must present credits amounting to a four years' high school course of not less than fifteen units. (A unit is the equivalent of one hour of recitation or two hours of laboratory work daily for thirty-six weeks). Special cases of mature students who wish to pursue college courses, but cannot present formal credits covering the required amount of preparatory work, will be considered on their merits.

It is recommended that the credits offered for entrance conform as nearly as possible to the course of study of the College Preparatory, given on another page of this catalog. A student, regardless of the number of units offered for entrance, will be conditioned in any preparatory subject which he has not had that must necessarily precede a required subject in his college course.

SECONDARY COURSES. To enter the first year of the college preparatory or any of the industrial courses, the student must have completed the eighth grade in the common schools.

CREDENTIALS. The student who expects to matriculate in this institution and wishes to receive credit for work done in some other school is advised to send his credentials to the President during the summer vacation, together with a definite statement of what course he wishes to take. If for any reason such credentials cannot be sent in advance of the student's arrival, he must be sure to bring them; otherwise he may be required to take the entrance examinations.

TIME TO MATRICULATE. *Particular attention is called to the fact that it is very much to the advantage of the student to be on time for matriculation. By doing so he avoids all loss of recitations at the beginning of his course as well as the payment of the fee referred to on page 28.*

SPECIAL STUDENTS.

Students of mature age, or those who have clearly defined special needs which are not served to the best advantage by any of the regular courses, may be admitted as special students. A student cannot become a special by failing in any part of his college work, or merely for the purpose of avoiding some college requirement. Before a student will be classified as a special student, he must:

- (1) Present to the President a written statement of his reason for wishing to take a special course. Such statement must show a serious purpose and desire to accomplish a regular course. It should include a statement of the line of work desired and, in the case of a new student, should be accompanied by a statement of the work already done in other institutions.

- (2) If a minor, present the written consent of the parent or guardian.

- (3) Obtain the approval of the President.

- (4) Pay a fee of five dollars a year in addition to the fees paid by regular students.

A student who has been accepted as a special student may elect any of the college, the preparatory, or the secondary technical courses, subject to the approval of the head of the department, who shall be the judge of his preparation for the work desired.

The institution offers a large variety of courses, both secondary and collegiate, so that, in all but very exceptional cases, the student will find a regular course to meet his needs. It is particularly urged that, so far as possible, all students enroll in regular courses. At the same time, it should be understood that the entire resources of the institution are open to the serious student with a definite purpose which cannot be served properly by a regular course.

IRREGULAR STUDENTS.

Students who, at the time of their entrance, are deficient in certain subjects or have credits in excess of those required, and students who fail in one or more subjects, may be temporarily irregular. They will be enrolled with the class to which they most nearly belong and will be held to the requirements of the course and class in which they are enrolled. The fact that a student is irregular will not be considered as a reason for enrolling him as a special and releasing him from the requirements of the regular courses.

FEES AND DEPOSITES.

The following yearly fees and deposits are due at the time of registration:

Entrance Fee.....	\$20.00
*Library Deposit.....	2.50
Military Uniform.....	25.00

Total\$47.50

All male students, excepting those taking the six weeks' winter course in Agriculture, will, at the time of registration, be required to purchase a uniform, but this should not be considered an additional expense, as the uniform is required to

*The Library Deposit is refunded to the student at the close of the year, or upon withdrawal from College, less charges for damage to or loss of College property.

be worn on all school days, and takes the place of a regular suit of clothes. The military uniforms are made to individual measure, are furnished the College at a low wholesale price, and are sold to students at cost. For description, see Military Department.

Students from states other than New Mexico pay a tuition fee of \$10.00 a year, and students from foreign countries \$50.00 a year, in addition to the entrance fee.

Those who enter at any other time than upon the days announced as regular registration days, pay a late registration fee of \$1.00

Special students pay an extra fee of \$5.00.

No portion of the fees will be refunded to students who leave school before the close of the year.

The following deposits are required for courses in which breakable apparatus is used by students: Chemistry, \$5.00. Botany courses in bacteriology and morphology, \$2.50. Mechanical Engineering, \$5.00. These deposits are refunded, less charges for breakage or damage.

Students in furnace assaying pay a fee of \$7.50 in addition to the chemistry breakage deposit of \$5.00.

Any student who ceases to attend classes for one week without excuse, or who leaves College without having secured a withdrawal card and an honorable dismissal, will be considered as dismissed without honor and will forfeit all deposits.

For rates for private instruction in music, see Department of Music.

Text-books and stationery are sold to students at cost at the College book store and supply room.

BOARD.

The College dining room in McFie Hall has accommodations for about one hundred persons, or about fifty more than the number who room in the building. A large number of the young men take their meals there. The price of board

without room at McFie Hall is \$16 a month, payable in advance at the Registrar's office. This is absolute cost. In the vicinity are a number of boarding houses and several private families who accommodate students with board.

GIRLS' DORMITORY.

McFie Hall, the dormitory for young women, will accommodate about fifty students. The price for board per calendar month, with room, light and heat, is \$20 when two young women occupy a room. This amount is payable in advance on the first of each month. Young women who desire to occupy a room alone will be charged \$24.00 per month. The rooms are comfortably furnished, but each student must provide comforts, blankets, sheets, pillow-slips, towels, napkins, napkin-ring, and two laundry bags. The student's name must be plainly marked on all pieces. A spoon and glass should be brought for use in the room.

All young women students are under the supervision of the Dean of Women, who is also the head of McFie Hall. Rooms should be reserved in advance by addressing the Dean of Women or the Registrar.

It is the policy of the College that young lady students shall be required to room and board at the Girls' Dormitory unless they stay with relatives or others in the vicinity who will be fully responsible for them as guardians or chaperones.

BOYS' DORMITORY.

On the College campus near the Science Hall is the Boys' Dormitory, which will accommodate about sixty students. Room rent in this building is \$4 a month for each boy, two in a room. The young men are also expected to furnish their bedding (except mattress and pillow). The price named covers the cost of light and heat. The dormitory is in charge of a member of the faculty and study hour periods are enforced. There is no dining hall in connection with the building, but boys who room in this dormitory can secure board at McFie Hall.

ESTIMATE OF NECESSARY EXPENSES.

Matriculation Fee.....	\$ 20.00	\$ 20.00
Nine months' board and lodging at \$20 to \$24	180.00 to	216.00
Laundry per month at \$1.00.....	9.00	9.00
Books and Stationery.....	10.00	20.00
Military Uniform.....	25.00	25.00
Incidentals.....	10.00	15.00
Total	\$254.00	to \$305.00

The average actual expense is about \$275 for the college year, including uniform, but not including other clothing and traveling expenses. The matriculation fee named above carries with it the privilege of attending all athletic contests held under the direction of the Department of Physical Education, admission to all numbers of the College Lyceum Course, one copy of the annual publication of the Junior Class, "The Swastika," and subscription to the student weekly, "The Round-Up," without additional cost to the students.

When satisfactory advance arrangements are made with the Registrar, charge accounts of students will be opened covering expenses for board and room, textbooks, and sundry school supplies such as are kept for sale at the College. Settlement may be made by parents for such accounts on itemized statement rendered monthly by the Registrar.

Where advisable, student funds may be deposited with the Registrar and paid out at the discretion of the students or their parents. This practice is encouraged, as it makes for economy and affords parents the opportunity of keeping expenses down to the minimum.

SELF SUPPORT.

There is considerable labor on the farm, in the shops, and in the laboratories, that can be performed by students, and the policy is to give it to students rather than to others. Some students have been able to earn enough money during the year to pay their expenses; but those doing so have had con-

stant employment in some subordinate position. The College cannot guarantee to furnish work for all students who wish it, or need it, in sufficient amount to pay expenses, but the College stands ready to help every worthy and industrious student who wants to help himself. In assigning work, preference is given to those who are most worthy and meritorious, and who are regular and punctual in attendance, and correct in deportment. This labor is paid for at the rate of from fifteen to twenty cents per hour, but the College reserves the right to limit the amount of work any student may do. In general, an energetic young man who wishes to work can count on earning enough to meet about half of his expenses. Many do better than this.

COLLEGE ORGANIZATIONS.

1. The public exercises of all college organizations are subject in time, place, and character to the approval of the President or faculty. When possible, notice should be handed to the President two weeks before the date desired for the exercise.
2. The faculty reserves the right of passing upon the constitution and by-laws of all college organizations.

THE STUDENT BODY.

For several years there has been an organization of the students known as the Student Body, which has had for its object the promotion of college spirit and the welfare of the student organizations in general. This organization adopted a constitution embodying a commission form of government under which each class or department elects two representatives, the resulting commission transacting all business of the Student Body. The acts of the commission are subject to initiative petition and vote of the Student Body as a whole. The constitution also establishes the honor system, by which the conduct of any student may be investigated and acted upon by the commission. The Student Body has control of the college weekly paper and elects its editor at the close of each school year.

THE ROUND-UP.

The "New Mexico Collegian," founded in 1893 by the Columbian Literary Society, and the "College Weekly," founded in 1906, by the Stenographers' Association, combined in 1907, forming "The Round-Up," a weekly under the control of the Student Body. The publication is in newspaper form. Its marked success has been due largely to the work of the editorial staff and the strictly business basis under which it is conducted.

THE COLUMBIAN LITERARY SOCIETY.

This organization is a revival of the old Columbian Literary Society which held for many years a prominent place in the student life of the College. The constitution admits only male students as members of the society. Meetings are held fortnightly and special prominence is given to oratory, debating and parliamentary practice. An annual debate is held between the members of the Columbian and Atadida Literary Societies; and these together with the state contests and prizes offered by the Alumni are creating an ever-increasing interest in public speaking.

THE ATADIDA LITERARY SOCIETY.

This is a literary society formed by the young women of the College, and has virtually the same aim as the Columbian. Some excellent and earnest work has been done during the past years; and the members feel that they have derived great benefit from it. Members of the Atadida Society may take part in most of the contests open to the Columbians. Every young woman in College should join this society.

AGRICULTURAL CLUB.

In order to foster a spirit of co-operation among the students and between the students and faculty, and to increase the interest in the agricultural work generally, this club has been organized and officered by the students under the direction of the agricultural faculty. The work of the club consists of weekly meetings for the purpose of hearing papers read by

students, by visitors, and by the faculty members, with an occasional social affair to which the general public is invited. Regular meetings are held each Wednesday night.

ENGINEERS' CLUB.

This organization, formed in the earlier years of engineering at this institution and organized in 1914, holds meetings regularly twice a month. Its purpose is the fostering of engineering and good fellowship by means of student papers and addresses by the faculty and outside engineers. Through this organization inspection trips are conducted to points of engineering interest around the College, such as Elephant Butte and El Paso.

ATHLETIC ASSOCIATION.

In 1893, the students organized the first Athletic Association to encourage and promote physical education and hygienic training of its members and to foster all athletic sports suitable for college students. The organization has been in continuous existence since that date and has expanded and developed until it is better organized and equipped, with athletic goods and grounds, and with funds to carry on the work, than any like organization in the state.

In 1912, it was voted by the students and adopted by the Board of Regents that part of the matriculation fee should be used to support athletics, and that all students paying this fee should be members of the Athletic Association with the privilege of attending all athletic contests held under the direction of the Department of Physical Education without additional charges.

Under the present organization the affairs of the Association are under the direct supervision of the Head of the Department of Physical Education. The Athletic Board, which consists of five members of the Athletic Association and the Head of the Department of Physical Education, act in an advisory capacity.

The value of this organization may be judged by the successful teams turned out by the College since 1912. In 1913, the "Aggie" football team won the championship of the

southwest. The following spring the track team won first place in the Annual Track and Field Meet of the Southwestern Amateur Association. The fall of 1914, our football team successfully defended its title to the State championship. Later in the same year our girls' basketball team was not defeated in the State, and the College baseball team won twelve out of thirteen games played against amateur teams, thereby getting a clear title to the Amateur Championship of New Mexico and southwest Texas. This college year, 1915-16, the football team lost but one championship game.

The College athletic field is by far the best field for football, baseball and track work of any in the state. Besides this we have the large, well lighted gymnasium floor, 40'x90', suitable for gymnasium classes, folk dancing and basketball; four tennis courts, two out-door basketball courts and a volley ball court; all of which are maintained by the Association for the use of the students.

THE YOUNG MEN'S CHRISTIAN ASSOCIATION.

No organization in the College occupies a more prominent or essential place than the Young Men's Christian Association; none offers larger opportunities for individual service; none exerts a more healthful influence on the student body as a whole. The Association owns a large two-story building, erected by liberal popular subscription, and handsomely equipped with dormitory, rest, and reading rooms. With this building as a center, various lines of religious and social activity are carried on. Sunday and mid-week meetings are held, bible classes are conducted, and extension work of various kinds is done. The membership of the Association comprises a large proportion of the students and faculty of the College.

THE YOUNG WOMEN'S CHRISTIAN ASSOCIATION.

Over seventy-five per cent of the young women in the College are members of the Young Women's Christian Association. The regular devotional meetings are held on Friday

of each week, and are led by ministers from some of the nearby churches, members of the faculty, or other able speakers. The society is visited annually by the State Secretary, and frequently by the National Secretary, and one or more girls are usually sent to the yearly conference in Cascade. The ideal of preparation for personal service is kept always uppermost, and the wholesome, helpful influence of the Association on the life of the College can hardly be estimated.

CHURCHES.

All students will be trained in the principles of morality, but no sectarian teaching will be tolerated in the College. Entire freedom of choice is given the student in selecting the church he will attend. Services are held at the following churches every Sunday: Catholic, Presbyterian, Methodist, Baptist, and Episcopal. The Gibbons Club, composed of Catholic students, is under the direction of members of the faculty and has a regular class in religious instruction Sunday mornings under the priest of the Las Cruces parish. St. James Choir of the St. James Episcopal church in Mesilla Park is composed wholly of College students and numbers about forty young men. At the Presbyterian church are held meetings of the Young People's Society of Christian Endeavor. With the Methodist church in Las Cruces is connected the Epworth League.

COLLEGE RULES.

This institution has no written rules relating to the conduct of students, but any violation of the accepted code is dealt with by the President or faculty council as the particular case may demand.

DISCIPLINE AND GOVERNMENT.

By the creation of the College of Agriculture and Mechanic Arts there has been provided for the youth of New Mexico the fullest and best opportunities to secure a practical education. Students who enjoy the advantages here offered should realize that to forfeit these privileges on account of their misuse or abuse is a matter of the most serious concern. No elaborate code for the conduct of the student is prescribed. The College rules are mainly for the purpose of facilitating the

College business. As regards behavior, students are expected to conduct themselves as ladies and gentlemen. If, after a fair trial, the influence of any student is found to be detrimental to scholarship, morals, or good order, dismissal will follow. This is pre-eminently a place for serious and earnest students.

ABSENCE AND TARDINESS.

1. Any student who has been absent from class and has failed to render an excuse within two days after returning may be excluded from all classes until a satisfactory explanation has been made, and will be given a daily grade of zero in all classes until reinstated. Women students must render excuses for absence from classes to the Dean of Women; male students to the President or such instructor as he may designate. A student will be given a daily zero for each absence unexcused, unless the work is made up to the satisfaction of the instructor.

2. Any student who is more than ten minutes late at class must render an excuse the same as for absence. A student who is not more than ten minutes late may be excused at the discretion of the instructor.

MISCELLANEOUS.

1. It is the duty of any instructor or other college officer to note and rebuke violations of good order.

2. No student whose work is unsatisfactory shall be permitted to take part in any public exercise connected with the College.

3. A student excused from military drill for physical disability or other reason, shall be required to take either corrective physical exercise or additional class-work to the amount of three practice hours each semester.

EXAMINATIONS.

1. Examinations for college students are held at the end of each semester; for Preparatory and Industrial students at the middle and end of each semester.

2. Entrance examinations are held at the beginning of the first semester.

3. Students whose class work is given grades A or B may, at the option of the instructor, be excused from examination.

4. Reports are sent to parents or guardians of all students after each examination.

SYSTEM OF GRADING AND CREDITS.

In accordance with the system of grading adopted during the present year, the letters A, B, C, D, and E will be used,—these letters to have the following significance: A, 90-100 per cent., indicating excellent work on the part of the student; B, 80-89 per cent., indicating good work; C, 70-79 per cent., indicating fair work; D, 55-69 per cent. indicating condition; E, below 55 per cent. indicating failure. Plus and minus signs after the letters may be employed or not as the instructor chooses. Students who are conditioned may remove the condition by a special examination or by study outside of class that meets with the approval of the instructor. All conditions must be removed at least two weeks before the end of the semester following their incurrance. Students who fail must take the work again in class.

College credit is reckoned in terms of units. A unit of college work is the equivalent of one hour of recitation or two hours of practice per week for eighteen weeks or one semester. A minimum of one hundred and fifty units is required for the completion of any of the regular college courses. This number includes six units of credit to be allowed for military drill and physical culture. In other words, in order to graduate from this institution, the student must do satisfactory work to the extent of eighteen credit hours per week throughout the four years, and, in addition, three practice hours per week in military drill or physical culture through the Freshman and Sophomore years. Neither military drill nor physical culture

will be required of students entering with Junior or Senior standing; nor will the requirements in these subjects be retro-active on students entering with advanced standing below the Junior year.

No credit in any course will be given for less than a full semester's work.

CLASSIFICATION.

1. Students are classified according to the number of units they have completed. Eighteen units of college work are required in each year of the college course, in addition to the military drill or physical culture, required of all able bodied students not classified as Juniors, Seniors or graduates.

2. No student taking a regular course is allowed to take any subject in that course until he has passed in all preceding work necessary to fit him for that subject. Neither will such a student be excused from any prescribed work in that course except by action of the President.

3. No special student is allowed to enter any class unless in the opinion of the instructor in charge he is prepared in all necessary preceding branches.

4. In case of any conflict in the program of studies the higher subject shall give way to the lower unless otherwise ordered by the President.

5. This College will accept credits from other institutions of equal rank.

6. To withdraw from any class, a student must present to the instructor the proper withdrawal card signed by the President.

7. To pursue special work in this institution a student must present reasons in writing for the same to the President for his approval.

8. No student will be assigned less than eighteen hours per week, except by permission of the President.

GRADUATION.

1. As stated above, one hundred and fifty units of credit are required for graduation from any of the regular college courses.

2. Seniors having conditions not removed at the middle of the second semester of the Senior year will not be considered candidates for a degree.

3. Each candidate for graduation is required to prepare a thesis, which shall be passed upon by a committee consisting of the head of the department in which the work was done, the professor of English and the President.

4. Any candidate for graduation may be required by the faculty to give an exercise on commencement day, consisting of an oration or an abstract of his thesis.

5. Subjects of theses must be presented to the head of the department for approval not later than the end of the first semester of the Senior year.

6. All theses must be handed in for final inspection by the committee referred to under Section 3 at least one week before commencement day, and finished theses must be filed with the Registrar not later than Monday of commencement week.

7. A thesis in order to be finally accepted must be clearly typewritten on good paper, $8\frac{1}{2} \times 11$ inches in size, and bound for preservation.

GRADUATE STUDENTS.

The work of graduate students is under the supervision of a committee of three, composed of the President, the chairman of the course of study committee, and the head of the department in which the major work is taken. The chairman of this committee is the head of the department concerned.

Regarding graduate courses of study, the following rules must be observed:

1. The course shall consist of work equivalent to eighteen lecture hours per week, and shall be distributed between one major and one minor.

2. The major, covering twelve hours, shall be advanced work not offered to undergraduates, in line with the candidate's principal work leading to the B. S. degree, and at least half of it shall be devoted to research whose results shall be embodied in a thesis.

3. The minor, covering six hours, may be chosen from a line distinct from that of the major, and may include work offered to the undergraduates of the Junior and Senior years.

4. The candidate must pass a satisfactory examination upon his work and present his thesis for final approval in typewritten form ten days before commencement.

DEGREES.

The degree of *Bachelor of Science (B. S.)* is conferred upon students who satisfactorily complete the work prescribed in any of the collegiate courses of study, but in order to receive the B. S. degree students are required to spend at least one year immediately before graduation in this institution.

The degree of *Master of Science (M. S.)* is conferred upon students of this institution who, after taking the degree of B. S., pursue for at least one year as resident, or for two years as non-resident students, a course of study approved by the committee in charge, pass an examination upon the same, and present a satisfactory thesis. Students of other institutions of similar character and equal rank, holding the bachelor's degree and desiring to take the M. S. degree from this institution, are subject to the same requirements as above, except that they must spend the year next preceding the granting of the degree in resident study.

BUILDINGS AND EQUIPMENT.

The property of the College includes an irrigated experimental farm of about 200 acres, and about an equal amount of unirrigated land. The campus upon which the principal buildings are located, consists of about twenty acres irrigated from a large pumping plant. The buildings include the following:

HADLEY HALL, Administration Building, containing offices of administration, the assembly hall, the library, the department of Household Economics, the college book store, and the post office.

WILSON HALL, Agricultural Building, containing class rooms, laboratories, and offices for the departments of Agronomy, Animal Husbandry, Horticulture, Irrigation Engineering, and the Agricultural Experiment Station. The basement contains a well equipped Dairy laboratory.

BOYS' DORMITORY, a two-story brick building containing rooms for about sixty boys. The building has modern the faculty who rooms in the building. The rooms are well conveniences, and is under the management of a member of furnished.

SCIENCE HALL, containing the class rooms and laboratories of the departments of Chemistry, Soil Physics and Biology.

ENGINEERING BUILDING, a three-story fireproof structure of reinforced concrete, erected in 1913. This building houses the departments of Civil, Irrigation, Mechanical and Electrical Engineering, and Physics.

MECHANICAL LABORATORIES, two one-story buildings containing a large amount of floor space to provide additional accommodations for the departments of Mechanical and Electrical Engineering, including recitation rooms, and forge and automobile shops.

Y. M. C. A. BUILDING, erected by private subscription at

a cost of \$15,000, occupies a prominent position on the campus and is the center of the religious and much of the social life of the College. The upper floor contains living rooms for eighteen young men, and the rental received helps to defray the expenses of the Association.

McFIE HALL, the dormitory for young women, is located a little apart from the other college buildings, on the avenue which runs through the College farm from the main campus to Mesilla Park. It has all modern conveniences, including steam heat, electric light, and baths, and will accommodate about fifty people. The college dining hall is located here.

THE GYMNASIUM, erected in 1911, is used partly for a recitation building. The large room on the first floor is used for the Armory, and locker rooms, dressing rooms, bath rooms, and officers of the department of Physical Education will ultimately be situated in this building. The second floor consists of one large room, fifty by eighty feet, with a gallery all around containing a running track.

THE OLD MAIN BUILDING, which was the first building erected on the College campus, was completely destroyed by fire in September, 1910, and this loss creates an urgent need for a new building to supply additional class rooms.

... OTHER BUILDINGS. In addition to the principal buildings above mentioned, there are numerous farm buildings; the seed house, green house, a large adobe corral with sheds for stock, feed and implements, a farm building on the horticultural farm, and two pump houses.

EQUIPMENT OF DEPARTMENTS. All the departments are well equipped with apparatus, material, books, and furniture for handling classes in their subjects. The institution pays fire insurance on a valuation of \$143,000 invested in equipment for the various College departments. This does not include the value of buildings and lands.

THE LIBRARY.

One of the most important features of the College is its library, which, supplementing the work of the class or lecture room, is open for reference from eight to five every day except Saturday afternoons and Sundays. Its books circulate among students and faculty with only slight restrictions. Both department and general library books are indexed in the general catalogue, making them all accessible. The library contains a representative collection of general literature; an excellent collection on agriculture and allied subjects; all available matter from the U. S. Department of Agriculture and the State Experiment Stations, and a large amount from the various State Departments of Agriculture. Much material from foreign countries has been catalogued during the past year, presenting a very complete view of the field of agricultural work at the present time. There are also excellent collections in the departments of Botany, Chemistry, and Mechanical Engineering, and the New Mexico material is being added to as opportunity arises.

The Reference Room contains a large and up-to-date collection, and encyclopedias, dictionaries and yearbooks are added as published. Many complete sets of bound periodicals, both technical and general, are on file here and are easily accessible by the aid of several indexes. The library has been a government depository since 1908, thus receiving much material of timely interest.

In the Reading Room there are on file two hundred and seventeen magazines, journals and translation of learned societies. Seven daily newspapers from various parts of the country are received and twenty-six weeklies from various counties of New Mexico are donated by their publishers.

The library is open from 8 A. M. to 12 M., and from 1 P. M. to 5 P. M., five days of the week, and from 8 A. M. to 12 M. on Saturdays. By making the necessary application to

the librarian, books and periodicals may be withdrawn, subject to the following rules:

1. Encyclopedias and similar works of reference do not circulate.

2. Current numbers of periodicals may not be kept out of the library longer than over night except during the period from Friday evening to Monday morning. For each day over time a fine of five cents is imposed. The last seven issues of the dailies, the last two issues of the weeklies, and the last issue of the monthlies are considered current numbers.

3. Current numbers of periodicals may not be withdrawn sooner than one hour before the library is closed, and must be returned by 9 A. M. of the following day on which the library is open.

4. Periodicals other than current numbers are governed by the same rules as library books.

5. No book or periodical assigned to any department may be withdrawn without the express consent of the head of that department. A record of loans is kept in each department.

The continued disregard of any of these rules will lead to the withdrawal of the privileges of the library from the offender.

Experiment Station

Experiment Station

EXPERIMENT STATION STAFF.

GEORGE EDGAR LADD, Ph. D., President of the College.

FABIAN GARCIA, M. S. A., Director and Horticulturist.

LUTHER FOSTER, M. S. A., Animal Husbandman.

FREDERICK LOUIS BIXBY, B. S., Irrigation Engineer.

*EUGENE PETER HUMBERT, Ph. D., Agronomist.

FREDERICK WALDEMAR CHRISTENSEN, M. S., Nutrition
Chemist.

DAYTON EUGENE MERRILL, M. S., Entomologist.

LOUIS ALLEN HIGLEY, Ph. D., Chemist.

RUPERT LYONEL STEWART, M. S. A., Agronomist.

FREDERICK CONRAD WORKENTHIN, A. M., Botanist.

DEAN WARD BLOODGOOD, B. S., Assistant Irrigation Engineer.

JOSE QUINTERO, B. S., Assistant Chemist.

JAMES RILEY MEEKS, B. S. A., Assistant Animal Husband-
man.

EDWARD HEBER DIVILBISS, B. S. A., Assistant Horticulturist.

JAMES THEODORE BARLOW, B. S. A., Assistant Agronomist.

JAMES GUY HAMILTON, B. S. A., Assistant Agronomist.

EDWARD JACKSON MAYNARD, B. S. A., Assistant Animal Hus-
bandman.

ARRA BURTON FITE, B. S. A., Assistant Horticulturist.

ROYAL BURLEIGH THOMPSON, B. S. A., Assistant Animal
Husbandman.

ARNOLD ZANE SMITH, B. S. A., Assistant Agronomist.

ARETUS HICKS BRADLEY, Station Stenographer.

*Resigned.

Experiment Station

The Experiment Station is that part of the institution which devotes its energies primarily to the verification of experimental data elsewhere obtained, with reference to their applicability to New Mexico conditions; to the determination of agricultural facts and principles affecting the agricultural practice in the State; and to the publication and distribution among the people in the State of the experimental and research data obtained from its investigations. The acts creating the Experiment Stations very clearly indicate what their functions should be. The Hatch Act, approved in March, 1887, states that the law was passed

"In order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigations and experiments respecting the principles and applications of agricultural science. * * * * * It shall be the duty and object of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subjected, with remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under the varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and waters; the chemical composition of manures, natural and artificial, with experiments designed to test the comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective States and Territories."

The Adams Act, approved in 1906, reads as follows:

"For the more complete endowment and maintenance of agricultural experiment stations now established, or which may hereafter be established in accordance with the act of Congress approved March 2, 1887;" the amounts appropriated "to be ap-

plied only to paying the necessary expenses of conducting original researches or experiments bearing directly on the agricultural industry of the United States."

The Station has issued one hundred Bullentins, copies of which may be had on application to the Director of the Station.

The Agricultural Experts employed by the Station are now at work on forty-five projects dealing with problems of a practical nature and pertaining especially to New Mexico conditions. For a detailed statement concerning these, write the Station for last annual report of the Director.

Extension Service

Extension Service

EXTENSION SERVICE STAFF.

- GEORGE EDGAR LADD, Ph. D., President of the College.
ABRAHAM C. COOLEY, B. S., Director and State Leader.
CLARENCE PENDLETON WILSON, M. S., Extension Secretary
and Editor of Agricultural Publications.
WILLIAM THOMAS CONWAY, B. S., State Leader in Boys' and
Girls' Club Work.
ROBERT WOOD LATTA, B. S., State Leader in Dairying.
GAIL RITCHIE, B. S., State Leader in Household Economics.
JOSEPH HARRINGTON TOULOUSE, Assistant State Leader in
Boys' and Girls' Club Work.
ONIS LONGBOTTOM, Extension Secretary.

Specialists.

- FABIAN GARCIA, M. S., Horticulturist.
*EUGENE PETER HUMBERT, Ph. D., Agronomist.
LUTHER FOSTER, M. S., Animal Husbandman.
LOUIS ALLEN HIGLEY, Ph. D., Chemist.
RUPERT LYONEL STEWART, M. S., Agronomist.
DAYTON EUGENE MERRILL, M. S., Biologist.
FREDERICK LOUIS BIXBY, B. S., Irrigation Engineer.

County Agriculturists.

- JOHN WHEELER RIGNEY, B. S., Chaves County.
VERE LORRAINE MARTINEAU, B. S., Colfax County.
*PIERRE DUANE SOUTHWORTH, B. S., Luna County.
JOHN WILLIAM KNORR, B. S., Eddy County.
ROLAND HARWELL, Torrance County.
HERBERT CLYDE STEWART, B. S., Bernalillo County.
PAUL BROWN BARBER, B. S., Dona Ana County.
MANRIQUE RODRIGUEZ GONZALEZ, B. S., San Miguel County.

Extension Service

The Extension Service was established a year ago last September, as a result of the Smith-Lever Act, which gave this State \$10,000 for its support. Its first work was to organize, and notwithstanding the fact that it has been in existence a very short time, it has already done some work in nearly every part of the State. This division was established for the purpose of disseminating scientific knowledge of agriculture and home economics among the people of the State. Its object is to improve and secure better home conditions, better farm practice, better organization, better management and better administration, to the end of increasing the net farm income, and in general, to make a more profitable, pleasant, and attractive country life.

LINES OF EXTENSION WORK.

1. *Publications and Correspondence.* Information bulletins are published treating the various phases of agriculture and home economics and these may be had free of charge by any one desiring the same.

The "College Courier" is a monthly publication, with a large circulation. In it appear each month the study outlines in home economics and the lessons for the boys and girls interested in club work.

At all times the Extension Division is ready and willing to answer questions through correspondence.

2. *Demonstrations.* As far as funds will permit, communities desiring help will be furnished with competent speakers to give lectures and demonstrations dealing with the various lines of agriculture and home making, such as pruning, spraying, stock judging, canning of fruits and vegetables, sanitation, labor saving devices, etc.

3. *Short Courses.* A number of two and three day short courses will be conducted throughout the State, wherever

there is sufficient interest and demand for them. Localities in which these courses are held will be expected to secure in advance the sale of fifty course tickets at one dollar each, and to advertise the short course and make all local arrangements. The amount secured from the sale of the tickets will be used toward defraying the expenses of the course. Sections wishing these courses should send in their applications as early as possible, so that satisfactory dates may be arranged.

4. *Fairs.* As far as possible, county and community fairs will be furnished with competent judges. The local fair associations will be asked to pay the expenses of these judges. In order that these fairs may have a greater educational value to their respective localities, the judges will be glad to cooperate with the fair associations in arranging and giving demonstrations and lectures in connection with the fairs. They will explain the methods and reasons of awards, and will give advice on what and how to exhibit, preparation of products for market, and instruction in various lines of agriculture and home building.

5. *Boys' and Girls' Club Work.* Through the State Leader in Club Work, industrial clubs are organized for the boys and girls of the State between the ages of ten and eighteen years. They are organized to make better boys and girls, also to teach them improved methods in farming and home-building, as well as how to grow and market crops, how to raise and manage farm animals and how to eliminate some of the waste on the farm. Monthly lessons are prepared by the State Leader and sent to all club members.

6. *County Agricultural Agents.* Nine counties (Luna, Colfax, Chaves, Dona Ana, Eddy, Torrance, Bernalillo, San Miguel and Mora) have taken advantage of the cooperative agreement entered into by the United States Department of Agriculture and the New Mexico College of Agriculture and Mechanic Arts for the establishing of agricultural agents in every agricultural county in the State as rapidly as conditions

warrant and funds permit. The college and the United States Department of Agriculture contribute twelve hundred dollars per annum toward the support of the work in any county or suitable group of counties which will, by contract, agree to provide for the balance, which is from sixteen to eighteen hundred dollars per year, depending on the size of the territory to be covered.

In addition to the twelve hundred dollars, the United States Department and College furnish the county man with the franking privilege, which permits all his official mail to be carried free of postage. They also furnish the supervision for the work, and a number of experts, whose duty it is to co-operate with the county agriculturists in their demonstration, organizing and teaching work with farmers and farm families. Counties interested can receive more detailed information relative to this work by writing the Extension Director at State College.

7. *Home Economics.* Home Economic clubs and associations are organized for the women of the State, by the State Leader, for the study of home problems. Instructions and demonstrations are given in the selection, preservation, preparation, and serving of foods, the use of modern household conveniences and labor saving devices, and the improvement of sanitary conditions. Neighborhood and community conferences are held, to study special problems of local interest.

Study outlines with references are prepared and sent out monthly by the State Leader to all clubs and associations.

8. *Farmers' Week and Home Makers' Conference.* Each year during the first part of January there is held at the College a Farmers' Week and Home Makers' Conference. Practical lectures and demonstrations dealing with almost every line of agriculture and home economics are given by men and women, both from the College and from outside of the State, who have had excellent training and a broad experience in their respective lines.

9. *Dairy Development.* The State Leader in dairying will give field instructions and demonstrations among the dairymen of the State, along the lines of silo, barn, and milk-house construction, dairy breeding, feeding, herd records, sanitary milk production, organization, and marketing.

10. *Information.* Further information relative to any line of Extension Work may be had by addressing the Extension Director of the New Mexico College of Agriculture and Mechanic Arts, State College, New Mexico.

Instructional Service

Instructional Service

SCHEDULE AND OUTLINE OF COURSES OF INSTRUCTION.

The outlines of the courses of instruction on the following pages are offered as suggestive of the general scope of the several lines of work and study open to election. The numbers preceding the several subjects refer to the description of the latter in the body of the catalog. Numbers following the subjects indicate the time and credit allotted to each of them, laboratory periods being marked P, two of which count as one credit hour.

In order to graduate in any course, the student must have taken work amounting to eighteen credit hours each semester for four years, the last of which must have been spent in residence at this college.

All male students except Juniors, Seniors, and graduate students are required to take, additionally, three hours per week in military science and tactics. Similarly, all young women except Juniors, Seniors and graduate students are required to take three hours per week of physical education. All students are required to attend a general assembly once a week.

Outline of Course in Agriculture

FRESHMAN.

First Semester.

Eng. 11. Rhetoric and Composition, 3. Chem. 11. General Chemistry, 3+3P.
 Biol. 11. General Botany, 2+3P.
 A. H. 1. Types of Live Stock, 1+3P.
 M. E. 31. Farm Motors, 2+3P.
 Phys. 13. Agricultural Physics, 2+2P.

Second Semester.

Eng. 12. Rhetoric and Composition, 3. Chem. 12. General Chemistry, 3+3P.
 Biol. 12. General Botany, 2+3P.
 A. H. 2. Types of Live Stock, 2+2P.
 Agron. 2. Elementary Agronomy, 2.
 Hort. 2. Plant Propagation, 1+3P.

SOPHOMORE.

Chem. 13. Organic Chemistry, 4P. Chem. 18. Agricultural Chemistry, 2+6P.
 A. H. 11. Farm Dairying, 2+3P. Biol. 16. Bacteriology, 2+3P.
 Agron. 11. Field Crops, 3. Agron. 12. Field Crops, 3.
 Biol. 13. General Zoology, 2+3P. Biol. 14. Physiology, 3+2P.
 C. E. 1, 3. Plane Surveying and Field Practice, 2+4P. Agron. 20. Plant Machinery, 1+3P.
 Hort. 3. Floriculture and Landscape Gardening, 1+2P. Hort. 4. Vegetable Gardening, 3.

JUNIOR.

Agron. 13. Soil Physics, 2+3P. Agron. 14. Soil Fertility, 2+3P.
 Hort. 5. Fruit Growing, 3. A. H. 6. Veterinary Science, 3.
 A. H. 7. Stock Feeding, 3. I. E. 4. Principles of Irrigation, 3.
 Biol. 17. Introductory Entomology, 2+2P. Biol. 18. Applied Entomology, 1+3P.
Electives:
 Biol. 19. Plant Histology, 1+3P. Biol. 20. Plant Pathology, 2+3P.
 Hort. 7. Viticulture and Nut Culture, 2. Hort. 6. Forestry, 2+2P.
 A. H. 3. Live Stock Management, 2+2P. A. H. 4. Stock Judging, 2+3P.
 Agron. 1. Grain Judging, 3P. A. H. 12. Dairy Manufactures, 3+3P.
 Eng. 15. English Poets of the 19th Century, 3. Eng. 16. English Poets of the 19th Century, 3.
 Agron. 7. Seeds, 2P.

SENIOR.

Geol. 11. General Geology, 4. Sociol. 2. Sociology, 2.
 Agron. 3. Farm Management, 2+2P. Agron. 4. Farm Management, 2+2P.
 Econ. 11. Economics, 3. Thesis, 5.
Electives:
 Hort. 17. Plant Breeding, 3. A. H. 8. Animal Breeding, 3.
 Hort. 9. Pomology, 3. Hort. 8. Olericulture, 1+3P.
 Hort. 11. Systematic Pomology, 2P. Hort. 12. Pomology Seminar, 2.
 Hort. 13. Packing, 2P. Hort. 14. Pruning, 1+2P.
 Hort. 15. Canning, 4P. A. H. 10. Herd Books, 2+2P.
 Hort. 9. Experimental Agronomy, 3P. I. E. 14. Irrigation Institutions, 2.
 Agron. 17. Agronomy Seminar, 1. Agron. 18. Agronomy Seminar, 1.
 Agron. 5. Advanced Farm Management, 3. Agron. 6. Advanced Farm Management, 3.
 A. H. 5. Stock Judging, 2+3P.

Electives must be approved by the head of the department.

Outline of Course in Household Economics

FRESHMAN.

First Semester.

Eng. 11. Rhetoric and Composition, 3.
 Chem. 11. General Chemistry, 3+3P.
 Biol. 11. General Botany, 2+3P.
 Ger. 1. German, 4 or Sp. 1. Spanish, 4.
 H. E. 1. Sewing I, 6P.
 Hort. 1. Gardening, 1+2P.

Second Semester.

Eng. 12. Rhetoric and Composition, 3.
 Chem. 12. General Chemistry, 3+3P.
 Biol. 12. General Botany, 2+3P.
 Ger. 2. German, 4 or Sp. 2. Spanish, 4.
 H. E. 10. Foods I, 6P.
 A. H. 16. Farm Poultry and Dairying, 1+2P

SOPHOMORE.

Chem. 33. Household Chemistry, 3+2P.
 Biol. 13. General Zoology, 2+3P.
 Ger. 3. German, 3 or Sp. 3. Spanish, 4.
 H. E. 9. Sanitation and Household Management, 4.
 H. E. 11. Foods II, 6P.

Chem. 34. Household Chemistry, 3+2P.
 Biol. 14. Physiology, 3+2P.
 Ger. 4. German, 3 or Sp. 4. Spanish, 4.
 H. E. 14. Household Physics, 2+2P.
 H. E. 2. Sewing II, 6P.

JUNIOR.

Econ. 11. Economics 3.
 Hist. 11. Modern Europe, 3.
 Eng. 15. English Poets of the 19th Century, 3.
 H. E. 15. Home Nursing and Invalid Cookery, 2+2P.
 H. E. 13. Foods III, 2+3P.
 H. E. 3. Dressmaking and Tailoring, 6P.

Econ. 12. Economic Problems, 2.
 Hist. 12. Modern Europe, 3.
 Eng. 16. English Poets of the 19th Century, 3.
 Biol. 16. Bacteriology, 2+3P.
 H. E. 14. Dietetics, 2+3P.
 H. E. 4. Millinery, 6P.

SENIOR.

Psych. 11. General Psychology, 4.
 Hist. 13. American History, 3.
 Eng. 17. Shakespeare, 3.
 Geol. 11. General Geology, 4.
 H. E. 7. House Decoration, 1+2P.
 Elective, 2.

Ped. 2. Rural Education, 4.
 Hist. 14. American History, 3.
 Eng. 18. Shakespeare, 3.
 Thesis, 5.
 H. E. 8. Textiles, 1+2P.
 Elective 2.

Electives must be approved by the head of the department.

Outline of Course in Civil Engineering

FRESHMAN.

First Semester.

Eng. 11. Rhetoric and Composition, 3. Math. 11. Engineering Mathematics, 5.
 Ger. 1. German, 4 or Sp. 1. Spanish, 4. Ger. 2. German, 4 or Sp. 2. Spanish, 4.
 Chem. 11. General Chemistry, 3+3P. Chem. 12. General Chemistry, 3+3P.
 M. E. 1. Engineering Drawing, 4P. M. E. 2. Engineering Drawing, 4P.
 M. E. 35. Woodwork, 4P. M. E. 36. Pattern Making and Foundry Practice, 4P.

Second Semester.

SOPHOMORE.

Math. 13. Calculus, 4. Math. 14. Calculus, 4.
 Phys. 11. Physics, 3+4P. Phys. 12. Physics, 3+4P.
 M. E. 3. Descriptive Geometry, 6P. M. E. 10. Applied Statics, 3.
 C. E. 1. Plane Surveying, 2. C. E. 4. Advanced Surveying, 2.
 C. E. 3. Field Practice, 4P. C. E. 6. Field and Office Practice, 3P.
 M. E. 37. Machine Shop and Forging, 4P.

JUNIOR.

Econ. 11. Economics, 3. Sociol. 2. Sociology, 2.
 M. E. 11. Strength of Materials, 4. M. E. 12. Applied Dynamics, 2.
 C. E. 11. Graphic Statics, 4P. I. E. 2. Hydraulics, 3.
 E. E. 1. Elements of Electrical Engineering, 4. E. E. 20. Electrical Engineering Laboratory, 4P.
 C. E. 7. Railway and Canal Survey, 3. M. E. 14. Elements of Power Engineering, 3.
 C. E. 9. Railway and Canal Field and Office Practice, 4P. C. E. 12. Bridge Stresses, 2.
 C. E. 14. Framed Structures, 4P.

SENIOR.

C. E. 15. Bridge Design, 6P. C. E. 16. Bridge Design, 6P.
 I. E. 7. Water Power Engineering, 3. I. E. 10. Public Water Supply, 3.
 C. E. 19. Reinforced Concrete and Masonry, 3. C. E. 22. Contracts and Specifications, 3.
 M. E. 21. Materials of Construction, 1. M. E. 30. Seminar, 1.
 M. E. 19. Materials Laboratory, 4P. C. E. 20. Sewage, 2.
 M. E. 27. Mechanical Engineering Laboratory, 4P. C. E. 18. Highway Engineering, 3.
 Thesis, 4.
 Geol. 11. General Geology, 4

Outline of Course in Electrical Engineering

FRESHMAN.

First Semester.

Eng. 11. Rhetoric and Composition, 3. Math. 11. Engineering Mathematics, 5.
 Ger. 1. German, 4 or Sp. 1. Spanish, 4. Ger. 2. German, 4 or Sp. 2. Spanish, 4.
 Chem. 11. General Chemistry, 3+3P. Chem. 12. General Chemistry, 3+3P.
 M. E. 1. Engineering Drawing, 4P. M. E. 2. Engineering Drawing, 4P.
 M. E. 35. Woodwork, 4P. M. E. 36. Pattern Making and Foundry Practice, 4P.

Second Semester.

SOPHOMORE.

Math. 13. Calculus, 4. Math. 14. Calculus, 4.
 Phys. 11. Physics, 3+4P. Phys. 12. Physics, 3+4P.
 M. E. 3. Descriptive Geometry, 6P. M. E. 10. Applied Statics, 3.
 M. E. 37. Machine Shop and Forging, 4P. M. E. 38. Machine Shop and Forging, 4P.
 C. E. 1. Plane Surveying, 2. M. E. 4. Machine Drawing, 4P.
 C. E. 3. Field Practice, 4P. M. E. 14. Elements of Power Engineering, 3.

JUNIOR.

Econ. 11. Economics, 3. Sociol. 2. Sociology, 2.
 M. E. 11. Strength of Materials, 4. M. E. 12. Applied Dynamics, 2.
 C. E. 11. Graphic Statics, 4P. I. E. 2. Hydraulics, 3.
 E. E. 1. Elements of Electrical Engineering, 4. E. E. 20. Electrical Engineering Laboratory, 4P.
 M. E. 15. Mechanism, 3. M. E. 26. Mechanical Engineering Laboratory, 4P.
 M. E. 6. Machine Design, 4P.
 M. E. 16. Thermodynamics, 3.
 E. E. 2. Dynamo Electric Machinery, 2.

SENIOR.

M. E. 17. Refrigeration and Heat Engines, 3. M. E. 18. Power Plant Engineering, 2.
 E. E. 3. Alternating Current Theory, 4. E. E. 4. Alternating Current Theory, 3.
 E. E. 21. Electrical Engineering Laboratory, 4P. E. E. 22. Electrical Engineering Laboratory, 4P.
 M. E. 27. Mechanical Engineering Laboratory, 4P. M. E. 30. Seminar, 1.
 M. E. 21. Materials of Construction, 1 Elective, 2. M. E. 18. Power Plant Engineering, 3.
 M. E. 19. Materials Laboratory, 4P. Thesis, 4.
 E. E. 7. Electrical Engineering Design, 1+4P.

Electives must be approved by the head of the department.

Outline of Course in Irrigation Engineering

FRESHMAN.

First Semester.

Eng. 11. Rhetoric and Composition, 3.
 Math. 11. Engineering Mathematics, 5.
 Ger. 1. German, 4 or Sp. 1. Spanish, 4.
 Chem. 11. General Chemistry, 3+3P.
 M. E. 1. Engineering Drawing 4P.
 M. E. 35. Woodwork, 4P.

Second Semester.

Eng. 12. Rhetoric and Composition, 3.
 Math. 12. Engineering Mathematics, 5.
 Ger. 2. German, 4 or Sp. 2. Spanish, 4.
 Chem. 12. General Chemistry, 3+3P.
 M. E. 2. Engineering Drawing, 4P.
 M. E. 36. Pattern Making and Foundry Practice, 4P.

SOPHOMORE.

Math. 13. Calculus, 4.
 Phys. 11. Physics, 3+4P.
 M. E. 3. Descriptive Geometry, 6P.
 C. E. 1. Plane Surveying, 2.
 C. E. 3. Field Practice, 4P.
 M. E. 37. Machine Shop and Forging, 4P.

Math. 14. Calculus, 4.
 Phys. 12. Physics, 3+4P.
 M. E. 10. Applied Statics, 3.
 C. E. 4. Advanced Surveying, 2.
 C. E. 6. Field and Office Practice, 3P.

JUNIOR.

Econ. 11. Economics, 3.
 M. E. 11. Strength of Materials, 4.
 C. E. 11. Graphic Statics, 4P.
 E. E. 1. Elements of Electrical Engineering, 4.
 C. E. 7. Railway and Canal Survey, 3.
 C. E. 9. Railway and Canal Field and Office Practice, 4P.
 Agron. 13. Soil Physics, 2.

Sociol. 2. Sociology, 2.
 M. E. 12. Applied Dynamics, 2.
 I. E. 2. Hydraulics, 3.
 E. E. 20. Electrical Engineering Laboratory, 4P.
 M. E. 14. Elements of Power Engineering, 3.
 I. E. 4. Principles of Irrigation, 3.
 Agron. 14. Soil Fertility, 2.

SENIOR.

I. E. 7. Water Power Engineering, 3.
 C. E. 19. Reinforced Concrete and Masonry, 3.
 I. E. 5. Irrigation Engineering, 4.
 M. E. 21. Materials of Construction, 1.
 M. E. 19. Materials Laboratory, 4P.
 M. E. 27. Mechanical Engineering Laboratory, 4P.

I. E. 10. Public Water Supply, 3.
 I. E. 12. Irrigation Design, 8P.
 I. E. 14. Irrigation Institutions, 2.
 M. E. 30. Seminar, 1.
 Thesis, 4.
 Elective, 2.

Electives must be approved by the head of the department.

Outline of Course in Mechanical Engineering

FRESHMAN.

First Semester.

Eng. 11. Rhetoric and Composition, 3
 Math. 11. Engineering Mathematics.
 Ger. 1. German, 4 or Sp. 1. Spanish.
 Chem. 11. General Chemistry, 3+3P.
 M. E. 1. Engineering Drawing, 4P.
 M. E. 35. Woodwork, 4P.

Second Semester.

Eng. 12. Rhetoric and Composition, 3.
 Math. 12. Engineering Mathematics, 3.
 Ger. 2. German, 4 or Sp. 2. Spanish, 4.
 Chem. 12. General Chemistry, 3+3P.
 M. E. 2. Engineering Drawing, 4P.
 M. E. 36. Pattern Making and Foundry Practice, 4P.

SOPHOMORE.

Math. 13. Calculus, 4.
 Phys. 11. Physics, 3+4P.
 M. E. 3. Descriptive Geometry, 6P.
 M. E. 37. Machine Shop and Forging, 4P.
 C. E. 1. Plane Surveying, 2.
 C. E. 3. Field Practice, 4P.

Math. 14. Calculus, 4.
 Phys. 12. Physics, 3+4P.
 M. E. 10. Applied Statics, 3.
 M. E. 38. Machine Shop and Forging, 4P.
 M. E. 4. Machine Drawing, 4P.
 M. E. 14. Elements of Power Engineering, 3.

JUNIOR.

Econ. 11. Economics, 3.
 M. E. 11. Strength of Materials, 4.
 C. E. 11. Graphic Statics, 4P.
 E. E. 1. Elements of Electrical Engineering, 4.
 M. E. 15. Mechanism, 3.

Sociol. 2. Sociology, 2.
 M. E. 12. Applied Dynamics, 2.
 I. E. 2. Hydraulics, 3.
 E. E. 2. Electrical Engineering Laboratory, 4P.
 M. E. 26. Mechanical Engineering Laboratory, 4P.
 M. E. 6. Machine Design, 4P.
 M. E. 16. Thermodynamics, 3.
 E. E. 2. Dynamo Electric Machinery, 2.

SENIOR.

M. E. 17. Refrigeration and Heat Engines, 3.
 M. E. 27. Mechanical Engineering Laboratory, 4P.
 M. E. 7. Machine Design, 4P.
 M. E. 23. Heating and Ventilating, 3.
 M. E. 21. Materials of Construction, 1
 M. E. 19. Materials Laboratory, 4P.
 M. E. 39. Shop Methods, 2.
 Chem. 23. Metallurgy, 3.

M. E. 18. Power Plant Engineering, 3.
 M. E. 28. Mechanical Engineering Laboratory, 4P.
 M. E. 8. Machine Design, 4P.
 M. E. 24. Shop Organization, 3.
 M. E. 30. Seminar, 1.
 Thesis, 4.
 Elective, 2.

Electives must be approved by the head of the department.

Outline of Course in General Science

FRESHMAN.

First Semester.

Eng. 11. Rhetoric and Composition, 3. Err. 12. Rhetoric and Composition, 3.
 Math. 11. Mathematics, 5. Math. 12. Mathematics, 5.
 Chem. 11. General Chemistry, 3+3P. Chem. 12. General Chemistry, 3+3P.
 Biol. 11. General Botany, 2+3P. Biol. 12. General Botany, 2+3P.
 Ger. 1. German, 4 or Sp. 1. Spanish, 4. Ger. 2. German, 4 or Sp. 2. Spanish, 4.

Second Semester.

SOPHOMORE.

Chem. 13. Organic Chemistry, 4. Chem. 14. Organic Chemistry, 2+6P.
 Biol. 13. General Zoology, 2+3P. Biol. 14. Physiology, 3+2P.
 Phys. 11. Physics, 3+4P. Phys. 12. Physics, 3+4P.
 Ger. 3. German, 3 or Sp. 3. Spanish, 4. Ger. 4. German, 3 or Sp. 4. Spanish, 4.
 Elective, 5. Elective, 3.

JUNIOR.

Econ. 11. Economics, 3. Econ. 12. Economic Problems, 2.
 Hist. 11. Modern Europe, 3. Hist. 12. Modern Europe, 3.
 Eng. 15. English Poets of the 19th Century, 3. Eng. 16. English Poets of the 18th Century, 3.
 Chem. 37. Mineralogy, 6P. Astron. 2. General Astronomy, 3.
 Science Elective, 7. Sociol. 2. Sociology, 2.
 Science Elective, 6.

SENIOR.

Geol. 11. General Geology, 4. Geol. 12. Historical Geology, 4.
 Hist. 13. American History, 3. Hist. 14. American History, 3.
 Eng. 17. Shakespeare, 3. Eng. 18. Shakespeare, 3.
 Psych. 11. General Psychology, 4. Thesis, 5.
 Astron. 3. General Astronomy, 2. Elective, 3.
 Elective, 2.

NOTE.—For the B. S. degree, students will be expected to elect in the Junior and Senior years, so far as practicable, consecutive courses in physicochemical, biological or social science.

Outline of College Preparatory Course

FIRST YEAR.

First Semester.

Eng. 1. First Year Preparatory English, 5.
 Math. 1. Elementary Algebra, 5.
 Geol. 1. Physiography, 3+3P.
One Elective:
 Lat. 1. Elements of Latin, 5.
 M. E. 33. Free-hand Drawing, 3P.
 M. E. 41. Manual Training, 6P.
 B. E. 1. Typewriting, 5P or 10P or
 B. E. 3 Stenography, 5.

Second Semester.

Eng. 2. First Year Preparatory English, 5.
 Math. 2. Elementary Algebra, 5.
 Geol. 2. Physiography, 3+3P.
One Elective:
 Lat. 2. Elements of Latin, 5.
 M. E. 34. Mechanical Drawing, 3P.
 M. E. 42. Manual Training, 6P.
 B. E. 2. Typewriting, 5P or 10P.
 B. E. 4. Stenography, 5.

SECOND YEAR.

Eng. 3. Second Year Preparatory English, 5.
 Hist. 1. General History, 5.
Two Electives:
 (A)
 Lat. 3. Latin Readings, 5, or
 Biol. 1. Elementary Zoology, 3+3P.
 (B)
 Math. 3. Plane Geometry, 5, or
 B. E. 7. Commercial Arithmetic, 5.
 (C)
 B. E. 1. Typewriting, 5P or 10P or
 B. E. 3. Stenography, 5.

Eng. 4. Second Year Preparatory English, 5.
 Hist. 2. General History, 5.
Two Electives:
 (A)
 Lat. 4. Latin Readings, 5, or
 Biol. 2. Elementary Botany, 3+3P.
 (B)
 Math. 4. Plane Geometry, or
 B. E. 8. Industrial Geography, 5.
 (C)
 B. E. 2. Typewriting, 5P or 10P or
 B. E. 4. Stenography, 5.

THIRD YEAR.

Eng. 5. Third Year Preparatory English, 5.
 Hist. 3. American History, 5.
Two Electives:
 (A)
 Lat. 5. Orations of Cicero, 4, or
 Sp. 1. Elements of Spanish, 5.
 (B)
 Math. 5. Solid Geometry, 5, or
 B. E. 7. Commercial Arithmetic, 5, or
 B. E. 1. Typewriting, 5P or 10P, or
 B. E. 3. Stenography, 5.
 (C)
 A. H. 1. Types of Live Stock, 1+3P.
 M. E. 31. Farm Motors, 2+3P.
 H. E. 1. Sewing I, 6P.
 M. E. 1. Engineering Drawing, 4P.
 M. E. 35. Woodwork, 4P.
 M. E. 37. Machine Shop and Forging, 4P.

Eng. 6. Third Year Preparatory English, 5.
 Hist. 4. American Government, 5.
Two Electives:
 (A)
 Lat. 6. Orations of Cicero, 4, or
 Sp. 2. Elements of Spanish, 5.
 (B)
 Math. 6. Advanced Algebra, 5, or
 B. E. 8. Industrial Geography, 5, or
 B. E. 2. Typewriting, 5P or 10P or
 B. E. 4. Stenography, 5.
 (C)
 A. H. 2. Types of Live Stock, 2+2P.
 Agron. 2. Elementary Agronomy, 2.
 Hort. 2. Plant Propagation, 1+3P.
 H. E. 10. Foods I, 6P.
 M. E. 2. Engineering Drawing, 4P.
 M. E. 36. Pattern Making and Foundry Practice, 4P.
 M. E. 38. Machine Shop and Forging, 4P.

Outline of College Preparatory Course---Cont.

SENIOR.

Eng. 7. Fourth Year Preparatory English, 5.

Two or Three Electives:

(A)

Lat. 7. Vergil's Aeneid, 4, or
Sp. 3. Spanish Readings, 4,

(B)

Phys. 1. Elementary Physics, 3+3P, or
Chem. 1. Elementary Chemistry, 4+2P.

(C)

Math. 7. Higher Arithmetic, 5, or
B. E. 1. Typewriting, 5P or 10P, or
B. E. 3. Stenography, 5.

(D)

Econ. 1. Elementary Economics, 4, or
Psych. 1. Elementary Psychology, 5.

(E)

Agron. 11. Field Crops, 3.
A. H. 11. Farm Dairying, 2+3P.
Hort. 3. Floriculture and Landscape Gardening, 1+2P.
Hort. 1. Gardening, 1+2P.
H. E. 11. Foods II, 6P.
M. E. 1. Engineering Drawing, 4P.
M. E. 35. Woodwork, 4P.
M. E. 37. Machine Shop and Forging, 4P.

Eng. 8. Fourth Year Preparatory English, 5.

Two or Three Electives:

(A)

Lat. 8. Vergil's Aeneid, 4, or
Sp. 4. Spanish Readings, 4.

(B)

Phys. 2. Elementary Physics, 3+3P, or
Chem. 2. Elementary Chemistry, 4+2P.

(C)

Math. 6. Advanced Algebra, 5, or
B. E. 2. Typewriting, 5P or 10P, or
B. E. 4. Stenography, 5.

(D)

B. E. 10. Commercial Law, 4, or
Ped. 2. Rural Education, 4.

(E)

Agron. 12. Field Crops, 3.
Agron. 20. Field Machinery, 1+3P.
Hort. 4. Vegetable Gardening, 3.
A. H. 16. Farm Poultry and Dairying, 1+2P.
H. E. 2. Sewing II, 6P.
M. E. 2. Engineering Drawing, 4P.
M. E. 36. Pattern Making and Foundry Practice, 4P.
M. E. 38. Machine Shop and Forging, 4P.
M. E. 4. Machine Drawing, 4P.

NOTE.—Electives must be approved by the head of the preparatory department. Students preparing for college must elect plane geometry; and for entrance to courses in General Science or Engineering, they must elect solid geometry and advanced algebra. For entrance to college courses in Household Economics they must elect elementary chemistry. The electives in Agriculture and Household Economics are offered especially to those who do not expect to enter college; they will not be credited for college entrance to courses in Agriculture and Household Economics.

The School of Agriculture

The School of Agriculture

FACULTY.

GEORGE EDGAR LADD, Ph. D., President of the College.

*EUGENE PETER HUMBERT, Ph. D., Dean of Agriculture and Professor of Agronomy.

FABIAN GARCIA, M. S., Professor of Horticulture.

LUTHER FOSTER, M. S. A., Professor of Animal Husbandry.

PEARL CHERRY MILLER, B. S., Professor of Household Economics.

LOUIS ALLEN HIGLEY, Ph. D., Professor of Chemistry.

DAYTON EUGENE MERRILL, M. S., Professor of Entomology.

RUPERT LYONEL STEWART, M. S., Professor of Agronomy.

FREDERICK CONRAD WORKENTHIN, A. M., Instructor in Botany.

EDWARD HEBER DIVILBISS, B. S., Instructor in Horticulture.

JAMES RILEY MEEKS, B. S., Instructor in Dairying.

JAMES THEODORE BARLOW, B. S., Instructor in Agronomy.

ARRA BURTON FITE, B. S., Instructor in Horticulture.

JAMES GUY HAMILTON, B. S., Instructor in Agronomy and Farm Superintendent.

EDWARD JACKSON MAYNARD, B. S., Instructor in Animal Husbandry.

JOSE QUINTERO, B. S., Instructor in Agricultural Chemistry.

ARNOLD ZANE SMITH, B. S., Instructor in Agronomy.

ROYAL BURLEIGH THOMPSON, B. S., Instructor in Animal Husbandry.

HELEN IDA THISSELL, Instructor in Domestic Art.

*Resigned.

The School of Agriculture

The School of Agriculture embraces the following departments of instruction:

- I. Department of Agronomy and Soil Physics.
- II. Department of Animal Husbandry, including Poultry and Dairying.
- III. Department of Horticulture, including Landscape Gardening and Floriculture.
- IV. Department of Household Economics.

The courses of study offered under these several departments are designed to combine, in the proper proportion, that amount of theoretical study with laboratory and field training which will produce a well rounded, practical, resourceful man.

To this end the courses are strong in botany and chemistry, which form important aids to applied agriculture, and a certain number of other subjects of general educational value are included. To all this is added a large amount of practical work under competent instruction and with a modern equipment. The instruction is given by text-books, lectures, laboratory practice, and field observation. These courses fit the young man for the various agricultural pursuits; *farming, stock-raising, dairying, fruit growing, market gardening, and the nursery business.* They also prepare him for professional positions in agricultural colleges, for service in the United States Department of Agriculture, and for farm management and supervision. The demand for trained men in these latter positions has been so great that in recent years almost all agricultural graduates have been called into college or experiment station work.

A new and important field of opportunity for young men trained in agriculture has been opened through the passage by Congress of the Smith-Lever bill for agricultural extension work and its acceptance by the various States of the Union.

Within a short time millions of dollars will be spent annually in carrying scientific agricultural knowledge to the farmers, in organizing the farmers and farmers' wives for better conditions of rural life, and improving marketing conditions. Within the past few months the State of New Mexico has employed twelve agricultural experts, at salaries ranging from \$1,500.00 to \$2,500.00 per year, and all traveling expenses paid. This opportunity is not alone for men, but also for women.

In the field of teaching both for men and women there is a constantly increasing demand for those who have had training in agricultural and farm problems. There is also a constantly increasing demand for young women teachers who have been trained in household economy.

DEPARTMENT OF AGRONOMY.

PROFESSOR HUMBERT

PROFESSOR STEWART

MR. BARLOW

MR. HAMILTON.

Agronomy is the science of the field and its crops. The object of the work is to acquaint the student with soils, crops, crop production, machinery of crop production, the improvement of soils, the preservation of fertility, and the application of economic business methods.

Agron. 1. *Grain Judging*. A laboratory course in judging various crops with regard to market grades and to seed. The score card is used extensively.

Required of Juniors specializing in Agronomy, and elective for other students in Agriculture prepared to take the work, first semester, 3 hours practice.

Agron. 2. *Elementary Agronomy*. This course gives a general survey of the different branches of agriculture, including the principles of plant growth, and the relation of soils and moisture to crops. Mr. Hamilton.

Required of Freshmen and Sophomore Irrigation Engineers in Agriculture, second semester, 2 hours.

Agron. 3. *Farm Management*. The work of this course consists of a study of some of the problems confronting a farmer in the development and management of different classes of farms. It treats of the location and grouping of farm buildings; utilization of the different soils and exposures; rotation and maintenance of soil fertility; provision for the necessary livestock, which includes a proper division between tilled and untilled land, meadow, pasture, etc.; and the development of the landscape effects of the entire farm. It correlates the study of soil management, crop management

and business management of the farm, including farm accounts. Professor Stewart.

Required of Seniors in Agriculture, first semester, 2 hours plus 2 hours practice.

Agron. 4. *Farm Management*. Continuation of Agron. 3. Professor Stewart.

Required of Seniors in Agriculture, second semester, 2 hours plus 2 hours practice. Prerequisite, Agron. 3.

Agron. 5, 6. *Advanced Farm Management*. This course affords an opportunity for those who have taken Agron. 3 and 4 to pursue the subject further. Farm labor income and efficiency factors will be given special attention. Professors Humbert and Stewart.

Elective for Seniors in Agriculture, first and second semester, 3 hours.

Agron. 7. *Seeds*. In this course studies of the identification, adulteration, and germination of farm seeds are taken up. A systematic study of seeds of the more common weeds is made, so that adulterants may be recognized and classified. Methods of selection and preservation of seeds are studied, and methods of treating seeds for fungus and other enemies. Professor Stewart.

Required of Juniors specializing in Agronomy and elective for other students in Agriculture prepared to take the work, first semester, 2 hours practice.

Agron. 9. *Experimental Agronomy*. Special work for advanced students, conducted in the field and laboratory, the aim being to familiarize them with the theories of investigation as they apply to the farm and to Station work. Professor Humbert.

Required of Seniors specializing in Agronomy and elective for other students in Agriculture prepared to take the work, first semester, 3 hours practice.

Agron 11. *Field Crops Cereals*. This course includes a study of the various cereal crops of the farm, with special reference to history of the crop, structure of the plant, classification, adaptation, areas of production, methods of production, natural enemies, uses, market conditions, and methods of improvement. Professor Stewart.

Required of Sophomores in Agriculture, first semester, 3 hours.
Prerequisite, Biol. 20.

Agron. 12. *Field Crops, (Forage Plants)*. The same general outline is followed in this Course as in Agron. 11, the forage crops being studied instead of common cereals. Professor Stewart.

Required of Sophomores in Agriculture, second semester, 3 hours.
Prerequisite, Biol. 20.

Agron. 13. *Soil Physics*. A study of the physical properties of soils and their relation to tillage and cultural methods. Special attention is given to the relation of water to soils. Field and laboratory experiments are conducted to show the relation of crop production and the physical properties of various soils. Mr. Barlow.

Required of Juniors in Agriculture, first semester, 2 hours plus 3 hours practice, of Juniors in Irrigation Engineering, 2 hours
Prerequisite, Chem. 11 and 12.

Agron 14. *Soil Fertility*. This course is continuation of Agron. 13. It includes a study of the physical, chemical, and biological properties of soils and their relation to the maintenance of soil fertility. A study is made of the use of manures and fertilizers. Mr. Barlow.

Required of Juniors in Agriculture, second semester, 2 hours plus 3 hours practice, of Juniors in Irrigation Engineering, second semester, 2 hours. Prerequisite, Agron. 13.

Agron 15. *Advanced Work in Soils*. The work of this course is a continuation of Agron 14, and consists of special

experimentation and lecture work on such subjects as fertilizers, inoculation, seepage and alkali studies. This course may be a major or minor subject for graduate work if desired. Professor Humbert and Mr. Barlow.

Elective, hours to be arranged.

Agron. 16. *Advanced Work in Crops.* Students desiring advanced work in crops may arrange for special laboratory and field work in plant breeding, tillage methods, rotation of crops. Professor Humbert and Mr. Hamilton.

Elective, hours to be arranged.

Agron. 17. *Agronomy Seminar.* In this course an effort will be made to study the current literature concerning field crops and soils.

Required of Seniors specializing in Agronomy and elective for other students in Agriculture prepared to take the work, first semester, 1 hour.

Agron. 18. *Agronomy Seminar.* A continuation of Agron. 17.

Required of Seniors specializing in Agronomy and elective for other students in Agriculture prepared to take the work, second semester, 1 hour.

Agron. 20. *Field Machinery.* This course is designed to familiarize students with the usual farm implements and machinery, particular stress being given to the types best suited to New Mexico conditions. The course will include studies of the construction and use of different forms of plows, haying machinery, windmills, pumps, wagons, drills, etc., their adaptation, and the conditions under which they can be used economically. Mr. Hamilton.

Required of Sophomores in Agriculture, second semester, 1 hour plus 3 hours practice. Prerequisite, M. E. 31.

Agron. 21. *Advanced Work in Field Machinery.* Students desiring advanced work in Agricultural Engineering may arrange for special laboratory and field work in this line. The same may be taken as a major or minor subject for advanced degree. Professor Stewart and Mr. Hamilton.

Elective for Juniors and Seniors in Agriculture, first semester, hours to be arranged.

EQUIPMENT.

The department of Agronomy occupies space in the Agricultural Building for laboratories, lecture rooms, and offices. It also has a soil physics laboratory in the Science Hall, its proportionate part in the large experiment station corrals, and a large adobe building for the storing of field crops, feeds, and light machinery. For the studies in soils, the department is well equipped with modern appliances for general and technical studies. For the studies in crops, the laboratories contain all the necessary permanent equipment, and each year new supplies of cereals, grasses, and forage crops are grown on the College farm for the use of the classes, and fresh supplies of foreign seeds are obtained when needed. The classes in agricultural engineering have access to different types of almost every field machine used in this region. The department is also well supplied with all drawing materials necessary for the classes in farm buildings. The extensive experiments carried on by the department with crops and soil are continually used for demonstrating the different subjects to the classes, and the immediate vicinity affords ample facilities for studying soil formation, transportation, and farm management.

DEPARTMENT OF ANIMAL HUSBANDRY..

PROFESSOR FOSTER.

MR. MEEKS.

MR. MAYNARD.

MR. THOMPSON

In view of the fact that the livestock industry is the leading industry of New Mexico and that its further development has wonderful possibilities, a strong course in animal husbandry is given with special reference to State conditions. The subjects are pursued from a practical as well as a scientific standpoint, having in view the thorough equipment of young men for successful work in breeding, care, and management of large herds.

A. H. 1. *Types of Live Stock*. This is a practical course in the study of animal type, form, and quality, and their relation to the utility of animals, suitability for breeding and market demands. The score card is used until the student gets thoroughly familiar with the desired conformation, when classes are made up for comparative judging. The first semester is devoted to a study of horses, beef cattle, and dairy cattle. Mr. Maynard.

Required of Freshmen in Agriculture, first semester, 1 hour plus 3 hours practice.

A. H. 2. *Types of Live Stock*. A continuation of preceding course; for the first several weeks, a study of hogs and sheep occupying the practice periods, followed by practice work in planning and carrying out the work of a poultry plant. The recitation periods are devoted to study of the poultry industry, as adapted to New Mexico conditions, including history and characteristics of the leading breeds; feed care, and management of fowls for eggs and market, principles of breeding, caponizing, and marketing of poultry and eggs, planning and arrangement of poultry houses, diseases

and parasites and their treatment, and artificial incubation and brooding. Mr. Maynard and Mr. Thompson.

Required of Freshmen in Agriculture, second semester, 2 hours plus 2 hours practice.

A. H. 3. *Practice in Live Stock Management.* This course is intended largely to prepare the students in the practical application of the many things that are necessary in the successful management of live stock. It consists of demonstrations and actual work in handling the various kinds of live stock, such as dehorning cattle, dipping stock, castrating animals, restraining animals for various operations and other purposes, fitting animals for sale and show, trimming feet, shearing sheep, fitting harnesses and hitching horses, training and breaking colts, and the use of various convenient appliances useful in handling stock. The student will thus be better prepared to take charge of stock farms and direct and perform the actual operations necessary for conducting the business. Mr. Meeks.

Required of Juniors in Animal Husbandry, elective for other students in Agriculture, first semester, 2 hours plus 2 hours practice.

A. II. 4. *Stock Judging.* Students are drilled in the comparison of animals, and their utility and adaptability to different conditions. The practical work of judging is supplemented by text books and lecture work on the history, development, characteristics, and suitability of horses, cattle, sheep, and swine for various purposes. The student is familiarized with the excellences and deficiencies of the different breeds, especially those best adapted to New Mexico conditions. Mr. Meeks.

Required of Juniors in Animal Husbandry, elective for other students in Agriculture, second semester, 2 hours plus 3 hours practice.

A. H. 5. *Stock Judging.* A continuation of the preceding course. Professor Foster and Mr. Meeks.

Required of Seniors specializing in Animal Husbandry, elective for other students in Agriculture, first semester, 2 hours plus 3 hours practice.

A. H. 6. *Veterinary Science*. This course consists of a study of animal anatomy and pathology. The work in anatomy familiarizes the student with the structure of farm animals, so that he can more intelligently select, feed, and care for his stock. The work in pathology includes the causes, prevention, diagnosis and treatment of the more common diseases met with among farm animals. It gives the student a general knowledge of some of the most dangerous and common contagious and infectious diseases, with methods of eradicating them from the country. Special attention will be given to horseshoeing with relation to the conformation and structure of the horse's foot, and to unsoundness and blemishes of horses. Mr. Meeks.

Required of Juniors in Agriculture, second semester, 3 hours.

A. H. 7. *Stock Feeding*. A study is made of the digestive system, principles of nutrition, and the composition of different feedstuffs, with a comparison of their relative values in feeding different kinds of stock, obtained from a study of the experiments conducted at the different stations. Special emphasis is put upon the compounding of rations from feeds available to New Mexico farmers and the profitable feeding of stock under New Mexico conditions. Professor Foster.

Required of Juniors in Agriculture, first semester, 3 hours.

A. H. 8. *Animal Breeding*. This course covers the laws governing the breeding of animals, and includes study of breed formation, principles of heredity, laws of correlation, variation, fecundity, atavism, in-and-in breeding, parentage, form types, and pedigrees. Attention is given to the selection of such animals as would aid in the improvement of New Mexico stock. Professor Foster.

Required of Seniors specializing in Animal Husbandry, elective for other students in Agriculture, second semester, 3 hours.

A. H. 10. *Herd Books*. The time in this is given over to a study of the pedigrees and their importance in selecting and breeding stock. It affords a training in the intelligent use of the various herd books and a study of the prominent families and tribes, and the influence of using their blood for breeding. Mr. Maynard.

Required of Seniors specializing in Animal Husbandry, elective for other students in Agriculture, second semester, 2 hours plus 2 hours practice.

A. H. 11. *Farm Dairying*. This course comprises a study of the properties of milk and its products. A thorough discussion of the following subjects is taken up in the class room and laboratory; sanitary conditions in the milking house, cares of milk, creaming, separating, testing, pasteurizing, churning, and marketing products. It also includes a study of the secretion, composition, food value, care, changes and adulteration of milk. A thorough study is made of hand separators, pasteurizers, churns, and other equipment. Mr. Meeks.

Required of Sophomores in Agriculture, first semester, 2 hours plus 3 hours practice.

A. H. 12. *Dairy Manufactures*. This course is designed to give the student a general knowledge of dairy manufactures, and particular training in butter and cheese making. Pasteurization, starter making, and tests for butter-fat in all dairy products, as well as tests for moisture, acidity, salt, and adulteration are carried out in the laboratory along with the making of butter and cheese. A study is made of creamery organization, equipment, and management. Lectures are given on dairy laws and regulations, imitation butters, city milk supply, ice cream, and condensed milk. Mr. Meeks.

Elective for Juniors in Agriculture, second semester, 3 hours plus 3 hours practice.

A. H. 16. *Farm Poultry and Dairying*. Farm poultry includes a study of the history and characteristics of some of the leading breeds, and their adaptabilities to household use. The feed, care, and management of fowls for eggs and for market, methods of killing and dressing poultry. Planning and arranging poultry houses; diseases and parasites and their treatment. Artificial incubation and brooding and methods of preserving eggs will be studied in this course. Dairying includes a study of sanitary milk production and the hygienic care and management of milk and cream. Further the course presents an opportunity to acquire a knowledge of butter making and some of the most important governing factors in the manufacture of butter. The Department wishes to make this course a practical and beneficial source of information that can be applied by those specializing in Domestic Science. Mr. Thompson and Mr. Maynard.

Required of Freshmen in Household Economics, second semester, 1 hours plus 2 hours practice.

EQUIPMENT.

Live Stock. The equipment in live stock is very good. Various breeds of cattle are represented in the College herd by both males and females of the standard dairy and beef breeds: Jerseys, Guernseys, Holsteins, Herefords, Short-horns and Aberdeen-Angus. Very good types of Rambouillet and Shropshire sheep are kept for instruction as well as some very fine specimens of Tamworth, Yorkshire, and Duroc-Jersey swine. All of the pure bred stock have either been selected from show stock or are descendants from prize-winning stock at the leading live stock shows. The poultry section consists of about two acres divided into eight pens, each containing its individual house. White Wyandottes, White Plymouth Rocks, Light Brahmas, Brown Leghorns, and Buff Orpingtons are at present being bred on the farm. A feed

house, brooder house, and an incubator cellar furnish quarters for various makes of incubators, brooders, bone cutters, dry feed hoppers, and other equipment.

Dairy Laboratory. Two large rooms on the lower floor of Wilson Hall are equipped for the dairy laboratory. Twelve hand separators representing the latest models of standard machines are available for use by the students. The power is obtained from a steam engine and a boiler, which also supplies steam for heating water and sterilizing the utensils. The other equipment consists of a power churn, hand churn, Babcock testers, both steam and hand, butter worker and printers, tables, cases, washing sinks, and a general assortment of apparatus for acid tests, moisture tests and the various kinds of dairy work. Besides this a small dairy is kept up at the farm where the milk from the College herd of 20 cows is cared for. All of the milk is separated and the cream churned in the dairy, and a supply of milk and cream is always available for use in the laboratories.

DEPARTMENT OF HORTICULTURE.

PROFESSOR GARCIA

PROFESSOR HUMBERT

MR. DIVELBISS

MR. FITE

The endeavor in teaching this subject is to train young men for successful work in horticultural pursuits, such as fruit growing, nursery business, market gardening, and landscape gardening, and to fill positions as fruit farm managers, experiment station workers, and teachers of horticulture. This instruction is given by text books and lectures, supplemented by outside reading, laboratory practice, and field observations.

Hort. 1. *Gardening*. This work consists of lectures and laboratory practice in vegetable growing, fruit growing, floriculture and landscape gardening. The student is expected to keep notes on all work, and practice in the green house and garden is given. Mr. Divelbiss,

Required of Freshmen in Household Economics, first semester,
1 hour plus 2 hours practice.

Hort. 2. *Plant Propagation*. The work is introductory in nature in regard to the general methods of propagating, such as seedage, cuttage, layerage, etc., but more complete instruction in the methods of propagating the common fruits is given. In the practice work the commercial methods of budding and grafting are emphasized. Mr. Divelbiss.

Required of Freshmen in Agriculture, second semester, 1 hour
plus 3 hours practice.

Hort. 3. *Floriculture and Landscape Gardening*. A study of systems of landscape gardening, comprising such subject matter as laying out and planting residence grounds; location of houses and other buildings, avenues, drives and walks; the setting of ornamental trees, shrubs, and flowers, adapted to planting in New Mexico; lawns, beds, and borders;

and the general principles involved in the arrangement and planting of home grounds and farms for beauty, comfort, and utility. Professor Garcia.

Required of Sophomores in Agriculture, first semester, 1 hour plus 2 hours practice.

Hort. 4. *Vegetable Gardening*. This study is of the different vegetable crops; the tillage, care, and planting of the garden; the use of cold-frames, hot-beds, and green houses; and the adaptation of varieties to local conditions. Lectures from practical gardeners, and trips to nearby gardens will be included in this course. Mr. Divelbiss.

Required of Sophomores in Agriculture, second semester, 3 hours.

Hort. 5. *Fruit Growing*. A short lecture course on orchard practices, including planning, planting, tillage, pruning, spraying, packing, classifying, marketing, etc. The object is to give a good fundamental knowledge of orcharding to general agricultural students. Professor Garcia.

Required of all Juniors in Agriculture, first semester, 3 hours.

Hort. 6. *Forestry*. This course includes the study of windbreaks, utility of forest plantations, and the general influence of forests on the climate and water courses. Attention is given to the forest conditions in New Mexico, and also to the species of trees adapted to street planting in this climate. Mr. Divelbiss.

Required of Juniors in Horticulture, elective for other students in Agriculture, second semester, 2 hours plus 2 hours practice.

Hort. 7. *Viticulture and Nut Culture*. An advanced course in the study of grapes, and of nut bearing trees. Mr. Divelbiss.

Required of Juniors in Horticulture, elective for other students in Agriculture, first semester, 2 hours.

Hort. 8. *Olericulture*. Advanced study and research work along special lines of vegetable gardening. Mr. Divelbiss.

Required of Seniors in Horticulture, second semester, 1 hour plus 3 hours of laboratory work.

Hort. 9. *Pomology*. This work consists of a study of the principal types of orchard fruits and small-fruits; their varieties, related forms, modifications, and adaptations under culture. It is an advanced course in the study of fruits. Mr. Divelbiss.

Required of Seniors in Horticulture, first semester, 3 hours.
Prerequisite, Hort. 5.

Hort. 11. *Systematic Pomology*. A study of the varieties of fruits, with practical work in classifying and judging. Professor Garcia.

Required of Seniors in Horticulture, first semester, 2 hours practice.

Hort. 12. *Pomology Seminar*. Preparation and discussion of papers on special horticultural subjects. Professor Garcia.

Required of Seniors in Horticulture, second semester, 2 hours.

Hort. 13. *Packing*. The handling and packing of fruits and vegetables in preparation for the market. A study of machinery, materials, and storage facilities is given with practical experience. Mr. Divelbiss.

Required of Seniors in Horticulture, elective for other students in Agriculture, first semester, 2 hours practice.

Hort. 14. *Pruning*. Special study of bud and tree growth, with instruction and practice in the art of pruning. Professor Garcia.

Required of Seniors in Horticulture, elective for other students in Agriculture, second semester, 1 hour plus 2 hours practice.

Hort. 15. *Canning*. Practical work in canning, with a study of machinery, methods, and cost. Mr. Divelbiss.

Required of Seniors in Horticulture, elective for other students in Agriculture, first semester, 4 hours practice.

Hort. 17. *Plant Breeding*. The student having completed his biological studies is prepared for a discussion of plant breeding and the evolution of cultivated plants. Selection, crossing, variation, mutation, and the influence of environment, food, etc., are investigated. Dr. Humbert.

Required of Seniors in Horticulture and Agriculture, first semester, 3 hours practice.

Thesis. Original research work in Horticulture under the supervision of the head of the department.

Required of Seniors in Horticulture, second semester, 5 hours.

GRADUATE WORK.

Advanced work in Horticulture is offered to students who are qualified and wish to specialize along this line. Special opportunities are offered for the study of problems bearing upon pomology, olericulture, and forestry. Some of the lines along which the student may work are:

Pomology. The orchards and vineyards of the department, containing a large number of varieties, furnish abundant material to the student who wishes to make a comparative study of varieties as well as of their adaptability to this climate.

Olericulture. Most of the time in this course will be devoted to problems relating to economic production of vegetables and marketing through various organizations. In addition to this, special study will be made of variations and adaptations to various climates and conditions.

Forestry. A study of forest economics, history of for-

estry, the relation of the forests directly and indirectly to the public welfare, forest administration, study of the factors influencing prices of lumber and forest products.

Landscape Gardening. Most of the time in this course will be devoted to the laying out of large public grounds and parks. Special attention will be given to the adaptability of ornamental plants to this climate.

EQUIPMENT.

This department has an excellent horticultural library, a number of different styles of orchard and garden cultivation, a good supply of the different kinds of pruning knives, shears, and saws, as well as garden trowels and dibbers, five kinds of sprayers, and a fair collection of fruits preserved in formalin.

The department also has a twenty-three-acre farm, where all the investigational work is conducted. The experimental orchards and vineyards contain many varieties of fruit trees and vines. Apples, peaches, pears, plums, cherries, apricots, small fruits, and grapes afford an excellent opportunity for the study of varieties and of cultural methods. Vegetable gardens, cold-frames, and green-houses, are available for practice and for experimental work. The arboretum, lawns and flower gardens give splendid facilities for observation and study.

During the past year the department installed a cannery. This is fully equipped with three different kinds of pressure boilers, the largest of which has a capacity of from 1500 to 3500 cans a day. The rest of the equipment is excellent also, consisting of a full supply of knives, pans, peelers, capping and tipping irons, etc. Apples, peaches, grapes, etc., with a variety of vegetables are obtainable from the farm for practice. Three different kinds of fruit graders are installed for practice in grading and packing fruit.

DEPARTMENT OF HOUSEHOLD ECONOMICS.

PROFESSOR MILLER.

MISS THISSELL.

The following courses are offered in the Household Economics Department: Foods I, II and III; Household Management, Home Nursing and Dietetics, in the Domestic Science Course, and Sewing I, and II, Dressmaking, House Decoration, Millinery and Textiles, in the Domestic Art Course.

In addition there are courses closely allied, as chemistry, physics, biology and agriculture.

The full course is planned for college students in Household Economics, but students in the preparatory department, who do not expect to enter college, may elect the following courses: Foods I and II, Sewing I and II, Gardening, Dairy-ing and Farm Poultry.

Students should confer with the department before registering for this course.

DOMESTIC ART.

H. E. 1. *Sewing I.* This course covers the various stitches in hand-sewing, and the use of sewing machine. The stitches are applied in the making of cooking uniform, a sewing apron, and a lingerie waist. Lessons are also given in mending, darning and patching. Miss Thissell.

Required of Freshmen in Household Economics, first semester, 6 hours practice.

H. E. 2. *Sewing II.* This course is a continuation of H. E. 1. A complete suit of underwear is finished and the remaining time is given to the making of simple dresses. Miss Thissell.

Required of Sophomores in Household Economics, second semester, 6 hours practice. Prerequisite, H. E. 1.

H. E. 3. *Dressmaking and Tailoring.* Instruction is given in the principles of garment making, taking measure-

ments, cutting and fitting. This course includes the making of a tailored gown, also an afternoon and party dress. Miss Thissell.

Required of Juniors in Household Economics, first semester, 6 hours practice. Prerequisite, H. E. 1 and 2.

H. E. 4. *Millinery*. The practical construction of hats of typical kinds, and their trimming for all seasons. Miss Thissell.

Required of Juniors in Household Economics, second semester, 6 hours practice. Prerequisite, H. E. 1.

H. E. 5. *Embroidery*. Work is given in simple embroidery. Miss Thissell.

Elective for students in Household Economics, first semester, 4 hours practice. Prerequisite, H. E. 1 and 2.

H. E. 6. *Basket Weaving*. Practical work in basketry. Miss Thissell.

Elective for students in Household Economics, second semester, 4 hours practice. Prerequisite, H. E. 1 and 2.

H. E. 7. *House Decoration*. A practical course in the decoration and furnishing of the entire home. The problem of artistic and economic furnishing and the cost of materials are considered. Miss Thissell.

Required of Seniors in Household Economics, first semester, 1 hour plus 2 hours practice.

H. E. 8. *Textiles*. This course covers the study of fibers and materials, their history and manufacture. The laboratory work includes the proper use of agents in relation to the dyeing and cleansing of fabrics. Miss Thissell.

Required of Seniors in Household Economics, second semester, 1 hour plus 2 hours practice.

DOMESTIC SCIENCE.

H. E. 9. *Sanitation and Household Management.* This includes the situation, surroundings and construction of the house; heating, ventilation, water supply and drainage; also the organization of the household and general management of the home. Professor Miller.

Required of Sophomores in Household Economics, first semester, 4 hours.

H. E. 10. *Foods I.* This course includes a study of the food principles as found in the different classes of foods, and the preparation of dishes to illustrate each principle. Professor Miller.

Required of Freshmen in Household Economics, second semester, 6 hours practice.

H. E. 11. *Foods II.* Continuation of H. E. 10. The practice work includes the preparation of fancy breads, salads, cakes and pastries. Professor Miller.

Required of Sophomores in Household Economics, first semester, 6 hours practice.

H. E. 13. *Foods III and Table Service.* This course applies particularly to the study of manufactured products and the relative cost of food. The laboratory work includes the preparation of more complicated dishes and the planning, cooking and serving of breakfasts, luncheons and dinners. Professor Miller.

Required of Juniors in Household Economics, first semester, 2 hours plus 3 hours practice. Prerequisite, H. E. 10 and 11.

H. E. 14. *Dietetics.* Foods are considered as to chemical composition, physiological properties and their relative value as nutritive agents; also the planning of hygienic combinations and balanced dietaries. Professor Miller.

Required of Juniors in Household Economics, second semester, 2 hours plus 3 hours practice. Prerequisite, H. E. 13.

H. E. 15. *Home Nursing and Invalid Cookery*. This course includes lessons on the furnishing, warming and ventilating of the sick room and administering to the patient; also the preparation of food suitable for the patient and the relation of certain foods to particular diets and diseases. Professor Miller.

Required of Juniors in Household Economics, first semester, 2 hours plus 2 hours practice. Prerequisite, H. E. 10 and 11.

The School of Engineering

The School of Engineering

FACULTY.

GEORGE EDGAR LADD, Ph. D., President of the College.

ARTHUR FRANKLIN BARNES, B. S. in M. E., Dean of Engineering and Professor of Mechanical Engineering.

MARION SHIRLEY BOWEN, Professor of Practical Mechanics.

RALPH WILLIS GODDARD, B. S. in E. E., Professor of Electrical Engineering.

GEORGE PATRICK STOCKER, B. S. in C. E., Associate Professor of Civil Engineering.

RAYMOND MATTHEW, B. S., Instructor in Irrigation Engineering.

ORRIC BAYLOR METCALF, M.S., Instructor in Practical Mechanics.

The School of Engineering

The following are the departments of instruction in the School of Engineering:

- I Department of Civil Engineering.
- II Department of Electrical Engineering.
- III Department of Irrigation Engineering.
- IV Department of Mechanical Engineering.

Engineering has been defined as the utilization of nature in the service and for the benefit of mankind, as illustrated in the construction and use of machinery, the erection and maintenance of structures, and the discovery, decomposition, and recomposition of the component parts of material things. The field thus described is so vast that it is impractical in this age of specialization for one to cover the whole, and for the needs of the southwest, four year courses are given by the several departments in Civil, Electrical, Irrigation and Mechanical Engineering, leading to the degree of Bachelor of Science in the course taken.

In addition to this, practical courses are offered in automobile practice, blacksmithing, carpentry, gas engine, and machine shop practice. These one and two year courses meet the needs of the young men who may not be able to pass the college entrance requirements.

The courses of study given by the various departments aim first to give a thorough grounding in the mathematics and physical sciences related to engineering with the application of these subjects to the fundamental and special branches of engineering, and second, to allow a considerable amount of specialization and practice along the several lines of study offered by the school.

Much time is necessarily devoted to higher mathematics

and to technical subjects; yet certain fundamental studies, necessary to a broad and liberal education, such as English, physics, chemistry, foreign languages and economics are provided for.

Instruction is given by lectures, recitations, and classroom discussions, together with practice in laboratories, shops and field work. The whole is so combined as to constitute a symmetrical course of study.

The plan of study in the engineering courses is as follows: An identical course is given for the first year and one-half, thus giving the student a solid foundation in the basis subjects of mathematics, physics, drawing and shop work. At the same time this gives opportunity for the young man to become familiar with the scope and character of work in the various branches. In the second semester, sophomore year, specialization begins, but until the end of the first semester, junior year, the majority of the courses are those fundamental to all engineering rather than to any particular branch. In the last year and a half extensive specialization is the practice, at the end of which time the student is ready to enter his chosen profession.

EQUIPMENT AND FACILITIES FOR INSTRUCTION.

The new engineering building, completed in 1913, affords every facility for work in engineering. It contains the physics, materials testing, and electrical laboratories, with lecture, recitation and drawing rooms in connection, as well as the engineering library. An extension of this building contains the wood and machine shops, all thoroughly equipped with the latest apparatus.

The old engineering building contains the mechanical engineering laboratory, forge, foundry and auto shops.

The engineering library is an extension of the main library of the college and is provided with the standard works on the several branches of engineering and allied subjects.

To this is being added from time to time new books which are of special worth. The library is also supplied with about twenty of the leading journals and magazines on various engineering subjects.

GRADUATE COURSES.

The degree of Master of Science is conferred upon students holding the degree of Bachelor of Science, upon completion of one year of resident graduate work in engineering, together with an acceptable thesis.

DEPARTMENT OF CIVIL ENGINEERING.

PROFESSOR STOCKER

MR. MATTHEW

The work in this department is designed to furnish a thorough course of theoretical instruction accompanied and illustrated by a large amount of practice.

While the course is made practical by giving the student a large amount of practice in the field, draughting room, and laboratory, the main object is the development of mental faculties and judgment. The power to acquire information and the ability to use it are held to be of greater value than any amount of so-called practical knowledge.

The aim of the department is to turn out not graduate engineers only, but men who are so equipped that they will be useful men in the engineering profession and with a few years of actual experience in that profession will be truly "Civil Engineers."

C. E. 1. *Plane Surveying*. A study of the care, use and adjustment of the more common instruments used in surveying, such as chain, tape, level, compass and transit.

Required of Sophomores in Engineering and Agriculture, first semester, 2 hours.

C. E. 3. *Field Practice*. To be taken only in connection with C. E. 1. It includes field problems with chain, tape, level, compass and transit.

Required of Sophomores in Engineering and Agriculture, first semester, 4 hours practice.

C. E. 4. *Advanced Surveying*. This course is a continuation of C. E. 1, but is a more thorough study of the theory of surveying. It includes the use of the higher instruments of precision in city, mining, topographic and hydro-

graphic surveying. The lectures are supplemented by problems based on field notes taken in M. E. 17 and C. E. 6.

Required of Sophomores in Civil and Irrigation Engineering, second semester, 2 hours. Prerequisite, M. E. 2, and C. E. 1 and 3.

C. E. 6. *Practice in Field and Office Work.* To be taken only in connection with C. E. 4. This course includes practical problems illustrating methods employed in land, city, mining, hydrographic and topographic surveys, and the plotting of notes taken in C. E. 1 and 3, together with practice in making connectional designs for topography, the design and arrangement of titles for maps and other drawings, and a study of the planimeter and its uses.

Required of Sophomores in Civil and Irrigation Engineering, second semester, 8 hours practice. Prerequisite, C. E. 1 and 3 and M. E. 2.

C. E. 7. *Railway and Canal Survey.* The theory of field and office work necessary for laying out simple, compound, transitory and vertical curves. This course includes also cross section work and the computation of earth work. The lectures are supplemented by a great variety of practical problems.

Required of Juniors in Civil and Irrigation Engineering, first semester, 3 hours. Prerequisite, C. E. 4 and 6.

C. E. 9. *Railway and Canal Field and Office Practice.* To be taken only in connection with C. E. 7. It is the aim of this course to supplement the lectures of C. E. 7 by a variety of field problems in laying out of curves, making cross sections, and computing earthwork.

Required of Juniors in Civil and Irrigation Engineering, first semester, 4 hours practice. Prerequisite, C. E. 4 and 6.

C. E. 11. *Graphic Statics.* This subject treats of the solution of engineering problems by graphical methods. Appli-

cation is made to a variety of practical problems in stress computations.

Required of Juniors in Engineering, first semester, 4 hours practice. Prerequisite, M. E. 2 and 10.

C. E. 12. *Stresses*. The analysis of simple bridge and roof trusses by algebraic and graphical methods. A variety of problems are also given involving stresses caused by dead and moving loads, special attention being given to subject of train loads.

Required of Juniors in Civil Engineering, second semester, 2 hours. Prerequisite, C. E. 11.

C. E. 14. *Framed Structures*. Complete design with detailed drawings and estimate of weights and cost of both a wooden and steel roof truss.

Required of Juniors in Civil Engineering, second semester, 4 hours practice. Prerequisite, C. E. 11 and M. E. 10 and 11.

C. E. 15. *Bridge Design*. This course is the complete design of a R. R. Plate Girder and includes detailed drawings and estimates of weights and costs.

Required of Seniors in Civil Engineering, first semester, 6 hours practice. Prerequisite, C. E. 12 and 14.

C. E. 16. *Bridge Design*. This course is a continuation of C. E. 15, but is the complete design of a riveted or pin connected railway bridge truss, stress sheet, general drawings, and estimates of weights and costs.

Required of Seniors in Civil Engineering, second semester, 6 hours practice. Prerequisite, C. E. 15.

C. E. 18. *Highway Engineering*. A study of the most modern practice in location, and specifications for construction of country highways and city pavements, including materials used with methods for testing the same.

Required of Juniors in Civil Engineering, second semester, 3 hours.

C. E. 19. *Reinforced Concrete and Masonry.* This course will include a study of the principles of reinforced concrete construction; analysis and simple problems in design, together with the theory governing the design of masonry structures; some time being devoted to deep foundation work. Practical problems will be given in both masonry work and reinforced concrete.

Required of Seniors in Civil and Irrigation Engineering, **first semester**, 3 hours. Prerequisite, M. E. 10, 11 and 12 and C. E. 11.

C. E. 20. *Sewage.* A study of the design and construction of sewage systems, composition of sewage, changes produced by bacteria, together with modern methods of treatment, purification and final disposal.

Required of Seniors in Civil Engineering, **second semester**, 2 hours. Prerequisite, M. E. 12 and I. E. 2.

C. E. 22. *Contracts and Specifications.* The laws of contracts as applied to engineering work, including the writing of advertisements, forms for bids, bonds, and the preparation of engineering specifications.

Required of Seniors in Civil Engineering, **second semester**, 3 hours.

Thesis for the Degree of B. S. in C. E. Original investigation of some engineering problem to be decided upon by the head of the department and the Dean.

Required of Seniors in Civil Engineering, **second semester**, 4 hours.

EQUIPMENT.

The equipment of the Department of Civil Engineering consists of one 8-inch transit theodolite complete, one complete plane table with alidade of latest pattern, five engineers' transits (including one solar attachment), three Wye levels, two Dumpy levels, one precision Dumpy with a precise level rod,

one traverse table complete, one Aneroid Barometer, together with various miscellaneous instruments such as stadia, level and line rods, chains, tapes and bobs. The department is also provided with drawing instruments, boards and drafting desks necessary for all office work in connection with field and laboratory work.

The equipment of this department is in excellent condition, the greater part being entirely new, replacing instruments destroyed at the time of the burning of the Old Main Building.

DEPARTMENT OF ELECTRICAL ENGINEERING.

PROFESSOR GODDARD.

The course in Electrical Engineering is designed to give the student not only a liberal education, but also a thorough knowledge of the fundamental laws of electricity through theory and practice, so that he may attack any problem that may arise with confidence in himself and his ability to work it out to a successful conclusion. The chief purpose and aim of the course is to teach scientific and systematic methods of solving problems, in general, for rapid and accurate results, and not the solution of a few particular ones. The engineer of today and especially in a new country like our southwest seldom meets two propositions exactly alike, but rather each undertaking is a new problem and has to be solved by methods best suited to its particular case. The ability to choose the best methods of attack and to carry these through with rapidity and accuracy to a satisfactory conclusion makes the successful engineer.

E. E. 1. *Elements of Electrical Engineering*. Theory of electrostatics, electromagnetics, and electric circuits. This course gives a thorough grounding in the fundamentals of electrical engineering.

Required of Juniors in Engineering, first semester, 4 hours. Prerequisite, Phys. 12 and Math. 14.

E. E. 2. *Dynamo Electric Machinery*. A continuation and development of E. E. 1 including direct current electrodynamic machinery.

Required of Juniors in Mechanical and Electrical Engineering, second semester, 2 hours. Prerequisite, E. E. 1.

E. E. 3. *Alternating Current Theory*. Theory of alter-

nating current circuits and apparatus, single and polyphase, including mathematical and graphic methods of calculation and representation.

Required of Seniors in Electrical Engineering, first semester, 4 hours. Prerequisite, E. E. 1.

E. E. 4. *Alternating Current Theory*. A continuation of E. E. 3, including a more critical study of A. C. Apparatus.

Required of Seniors in Electrical Engineering, second semester, 3 hours. Prerequisite, E. E. 3.

E. E. 6. *Electric Power Transmission*. A study of the transmission of electrical energy for lighting and power purposes by different systems; wiring methods with insurance rules and regulations; the design, construction, and maintenance of transmission lines of high and low potentials.

Required of Seniors in Electrical Engineering, second semester, 3 hours. Prerequisite, E. E. 1.

E. E. 7. *Electrical Engineering Design*. The design of electro-magnets and direct current dynamo-electric machinery.

Required of Seniors in Electrical Engineering, first semester, 1 hour plus 4 hours practice. Prerequisite, E. E. 2.

E. E. 8. *Electrical Engineering Design*. A continuation of E. E. 7 including the design of alternating current generators, motors and transformers.

Elective for Seniors in Electrical Engineering, second semester, 4 hours practice. Prerequisite, E. E. 3 and 7, and registration in E. E. 4.

E. E. 10. *Electric Railways*. A study of electric railway systems and their principal parts, including track and trolley construction, motors, and their characteristics, rolling stock, etc.

Elective for Seniors in Electrical Engineering, second semester, 2 hours. Prerequisite, E. E. 1.

E. E. 12. *Telephone Engineering*. A study of telephone systems and telephone apparatus.

Elective for Seniors in Electrical Engineering, second semester, 2 hours. Prerequisite, E. E. 1.

E. E. 14. *Illuminating Engineering*. A study of different types of electric lamps, shades, diffusers, and reflectors; their construction and characteristics; photometry; the calculation of proper illumination and spacing of lamps for different purposes.

Elective for Seniors in Electrical Engineering, second semester, 2 hours. Prerequisite, E. E. 1.

E. E. 16. *Storage Battery Engineering*. A study of storage cells, their construction, action, and characteristics, with methods of application to practical operation.

Elective for Seniors in Electrical Engineering, second semester, 2 hours. Prerequisite, E. E. 1.

E. E. 18. *Power Transmission*. The design and construction of high potential power transmission lines.

Elective for Seniors in Electrical Engineering, second semester, 2 hours. Prerequisite, E. E. 3, and registration in E. E. 4 and 6.

E. E. 20. *Electrical Engineering Laboratory*. The operation and testing of electric instruments, lamps, motors, generators, and auxiliary apparatus.

Required of Juniors in Engineering, second semester, 4 hours practice. Prerequisite, E. E. 1.

E. E. 21. *Electrical Engineering Laboratory*. A continuation of E. E. 20, including the transformer, polyphase power measurements, and alternating current generator.

Required of Seniors in Electrical Engineering, first semester, 4 hours practice. Prerequisite, E. E. 20, and registration in E. E. 3.

E. E. 22. *Electrical Engineering Laboratory.* A continuation of E. E. 21, including the induction motor, synchronous motor and rotary converter.

Required of Seniors in Electrical Engineering, second semester, 4 hours practice. Prerequisite, E. E. 3 and 21, and registration in E. E. 4.

Thesis for Degree of B. S. in E. E. Original investigation in some engineering problems to be decided upon by the head of the department and the Dean.

Required of Seniors in Electrical Engineering, second semester, 4 hours.

EQUIPMENT.

The electrical laboratory contains a varied collection of modern machinery, arranged for general utilization, test work, or special study. These machines are served by a system of conductors installed in conduit, whereby any machine may be connected electrically to any other through a large plug switchboard. Provision is also made so that the different motors and generators may be mechanically connected either by means of belts or flexible coupling. The laboratory is also equipped with suitable instruments for measuring electrical power, potentials, and currents, as well as apparatus to facilitate the carrying on of all of the common tests of electrical machinery, both stationary and dynamic.

A partial list of the above-mentioned apparatus follows. New additions are constantly being made as the needs of the laboratory demand or new things are placed upon the market:

A 22½ K. W. bank of transformers for transforming 2,200 volt 60 cycle alternating current from the Las Cruces Electric Company's plant to various potentials for use about the laboratory.

A 72 receptacle plug switch board.

A 10 H. P., three phase, 220 volt, induction motor.

A. 3 H. P., three phase, 220 volt, induction motor.

A 9 K. W. 250 volt direct current generator.

A $7\frac{1}{2}$ K. W. 250 or 110 volt direct current generator.

A. 3 H. P. 110 volt Westinghouse Type SK. motor.

A 2 K. W. rotary converter, 250 volts D. C. 110,—178 volts A. C.

A $2\frac{1}{2}$ K. W. 110 volt direct current generator.

A $2\frac{1}{2}$ K. V. A. 110 volt alternating current three phase generator.

A $2\frac{1}{2}$ K. V. A. 220-110 volt, 110-55 volt special test transformer with 86% taps for Scott three phase, two phase transformation.

Two 2 K. V. A. 220-110 volt, 110-55 volt test transformers.

Three 5 K. W. lamp banks with switching arrangements.

An electric arc welding plant.

A polyphase power measurement switchboard.

Full equipment of no-voltage release and overload release, motor starting boxes, auto transformers and starters for induction motors, field and armature resistances, circuit breakers, fuse blocks, switches, inductances, condensers, prony brakes, and brake pulleys, samples of arc and incandescent lamps, including the new nitrogen filled lamp.

DEPARTMENT OF IRRIGATION ENGINEERING.

MR. MATTHEW

PROFESSOR STOCKER

Irrigation Engineering comprises the design, construction and maintenance of irrigation systems both large and small.

Especial attention is given in the first three years of the irrigation course to the foundation subjects upon which all engineering practice is based. Courses have been selected from the departments of Agriculture, Mechanical, Electrical, and Civil Engineering to give the student a good liberal education and a general knowledge of engineering. Surveying is covered in all its phases; steam and gas engines, electrical motors and machinery, design of buildings and the various branches of agriculture all receive attention. In the Junior and Senior years the irrigation courses take up the subject of irrigation from all standpoints. Meteorology, water supply, water power, dams, and irrigation structures, canal systems, drainage, measurement of water, pumping and irrigation laws are studied.

Upon completion of the irrigation course, the graduate will have a good knowledge of the many problems confronting the irrigation engineer in the southwest and should be able to do creditable work in this most attractive branch of the engineering profession.

I. E. 2. *Hydraulics*. This course consists of a brief study of the elementary principles of the mechanics of fluids and a more thorough study of the flow of water under various conditions; including measuring devices such as orifices, weirs, rating flumes, and current meter. Some time is devoted to theory and construction of pumping machinery and hydraulic motors.

Required of Juniors in Engineering, second semester, 3 hours.
Prerequisite, M. E. 10 and 11.

I. E. 4. *Principles of Irrigation.* History of Irrigation, preparation of land for irrigation, the use of water applied to the soil, growth of plants, methods of irrigating, measurement and duty of water, management of canal systems.

Required of Juniors in Irrigation Engineering and Agriculture, second semester, 3 hours.

I. E. 5. *Irrigation Engineering.* Planning irrigation systems, the location, design and cost of canals, study of irrigation structures, dams and reservoirs, pumping for irrigation, water losses from reservoirs and canals, management of irrigation systems.

Required of Seniors in Irrigation Engineering, first semester, 4 hours. Prerequisite, I. E. 2 and 4.

I. E. 7. *Water Power Engineering.* A study of the theory, investigation, and development of Water Power. The work of the text will be supplemented by a variety of practical problems.

Required of Seniors in Irrigation and Civil Engineering, first semester, 3 hours. Prerequisite, I. E. 2 and M. E. 10 and 12

I. E. 8. *Drainage.* Movement of water in soils, water-logging and alkali, types of drain and drainage systems, organization of drainage districts.

Required of Seniors in Irrigation Engineering, second semester, 2 hours. Prerequisite, I. E. 4.

I. E. 10. *Public Water Supply.* This course covers the theory and development of water supplies for domestic, manufacturing, and fire service. It deals with the quantity of water, sources of supply, quality of water from different sources, communicable diseases, methods of purification and distribution of same.

Required of Seniors in Irrigation and Civil Engineering, second semester, 3 hours. Prerequisite, registration in I. E. 2.

I. E. 12. *Irrigation Design*. The design and estimating of costs of irrigation structures such as canal linings, flumes, headworks, tunnels, drops, distribution boxes, etc.

Required of Seniors in Irrigation Engineering, second semester, 8 hours practice. Prerequisite, I. E. 5.

I. E. 14. *Irrigation Institutions*. The laws of the surface and underground waters of the western states, rights of way, irrigation organization, irrigation securities and investments.

Required of Seniors in Irrigation Engineering, elective for Seniors in Agriculture, second semester, 2 hours. Prerequisite, I. E. 4 and 5.

Thesis for the Degree of B. S. in I. E. Original investigations of some engineering problems to be decided upon by the head of the department and the Dean.

Required of Seniors in Irrigation Engineering, second semester, 4 hours.

EQUIPMENT.

For field work in Irrigation Engineering, hydraulic apparatus is provided such as water stage registers, hook gauges, weirs, current meters, etc.

DEPARTMENT OF MECHANICAL ENGINEERING.

PROFESSOR BARNES

PROFESSOR BOWEN

PROFESSOR GODDARD

MR. METCALF

MR. MATTHEW

The course in Mechanical Engineering offers instruction in the scientific principles forming the foundation of all engineering, but with special regard to the generation and measurement of power, to the principles of design, construction and operation of machinery, and to the commercial practice of manufacturing and management. The field described above is so broad that the graduate from this work need not confine himself to a particular profession, but is especially fitted to enter upon positions leading to superintendence and management of enterprises, and as a rule should outstrip his competitor who lacks the thorough and systematic training given by this course. The rapid growth of the southwest, with its railroads, power plants and mines, demands an engineer who not only is well trained in his profession but understands the essential principles of efficiency and organization.

M. E. 1, 2. *Engineering Drawing*. Lettering, title designing, dimensioning, geometrical problems, orthographic projection, intersection and development of surfaces. Working drawings, detailing and dimensioning, assembly drawings, tracing and blue-printing, shading and isometric drawings.

Required of Freshmen in Engineering, first and second semester, 4 hours practice.

M. E. 3. *Descriptive Geometry*. In this course problems are given involving the application of principles relating to the point, line and plane; together with a study of the generation and classification of lines, surfaces, tangent planes to surfaces, plane sections, intersections, and developments. The time in

the draughting room is devoted to a study of more general problems requiring more time for their solution.

Required of Sophomores in Engineering, first semester, 6 hours practice. Prerequisite, M. E. 2.

M. E. 4. *Machine Drawing*. Representation, dimensioning and specification of machine parts, study of standard commercial forms, sketches, detail and assembly drawings, simple designing from observation and empirical rule.

Required of Sophomores in Mechanical and Electrical Engineering, second semester, 4 hours practice. Prerequisite, M. E. 1, 2 and 3.

M. E. 6. *Machine Design*. Machine Drawing is merged into machine design applying the principles of strength of materials and mechanisms with commercial practice to the design of elements of machines, such as journals, gears, cams, and finally the complete design of a simple machine.

Required of Juniors in Mechanical and Electrical Engineering, second semester, 4 hours practice. Prerequisite, M. E. 4, 11 and 15.

M. E. 7. *Machine Design*. Continuation of M. E. 6, involving the complete design of a more complicated machine.

Required of Seniors in Mechanical Engineering, first semester, 4 hours practice. Prerequisite, M. E. 6.

M. E. 8. *Machine Design*. In this course the students is given his choice of designing either steam or gas engine, combining the theory, practice, and principles of operation of these machines with the question of strength, proportion and size of the various elements.

Required of Seniors in Mechanical Engineering, second semester, 4 hours practice. Prerequisite, M. E. 7.

M. E. 10. *Statics*. The work in this course embraces the study of the laws of equilibrium, composition and resolution

of forces, center of gravity, moment of inertia and the laws of friction. Analytic and graphical methods applied to the solution of problems taken from engineering practice.

Required of Sophomores in Engineering, second semester, 3 hours. Prerequisite, Math. 12.

M. E. 11. *Strength of Materials.* The laws of stress, strain, and elasticity of materials. The theory of beams, columns and torsion of shafts, reinforced concrete and use of structural steel handbook. Practical problems on the design and investigation form an important part of the course.

Required of Juniors in Engineering, first semester, 4 hours. Prerequisite, Math. 14 and M. E. 10.

M. E. 12. *Dynamics.* Principles of velocity, acceleration, momentum and impact; work, energy and power, power transmission, dynamometers, dynamics of the steam engine and other machines. Applications and problems from engineering.

Required of Juniors in Engineering, second semester, 2 hours. Prerequisite, M. E. 10 and 11.

M. E. 14. *Elements of Power Engineering.* Types and general construction, theory and principle of operation of steam boilers, engines, power plant auxiliaries, gas producers and internal combustion engines. Visits to power plants.

Required of Sophomores in Mechanical Engineering, and of Juniors in Civil and Irrigation Engineering, second semester, 3 hours.

M. E. 15. *Mechanism.* A study of motion and forms of mechanism, velocity and acceleration diagrams, instantaneous centers, belting, cams, gear teeth and gear trains, link work and valve gears, practical problems.

Required of Juniors in Mechanical and Electrical Engineering, first semester, 3 hours. Prerequisite, Phys. 11 and Math. 12.

M. E. 16. *Applied Thermodynamics.* This subject treats of the solution of problems involving the action of heat as

applied to steam engines, gas engines and other heat motors. Laws of thermodynamics of gases and saturated vapors and superheated steam. The application of these laws to air compressors and heat engine performance and efficiency.

Required of Juniors in Mechanical and Electrical Engineering, second semester, 3 hours. Prerequisite, Phys. 12, Math. 14 and M. E. 14.

M. E. 17. *Refrigeration and Heat Engines*. This course is a continuation of M. E. 16, but dealing more specifically with the thermodynamics, study, and design of refrigerating machinery, gas engines, steam engines and turbines. Practical problems in design and performance of these machines are the features of the work.

Required of Seniors in Mechanical and Electrical Engineering, first semester, 3 hours. Prerequisite, M. E. 16.

M. E. 18. *Power Plant Engineering*. The proper selection of power plant apparatus, cost of power as influenced by equipment, load, operation and maintenance, depreciation, insurance, etc. Comparative merits of steam and gas power, problems.

Required of Seniors in Mechanical and Electrical Engineering, second semester, 3 hours. Prerequisite, M. E. 17 and 27.

M. E. 19. *Materials Laboratory*. The principal materials used in construction, cast iron, wrought iron, steel, brass, bronze, compositions, alloys, timbers, brick, cement, and concrete. Manufacture, properties, and specification. Standard laboratory tests in tension, compression, bending, etc. of materials including complete work in cement and concrete.

Required of Seniors in Engineering, first semester, 4 hours practice. Prerequisite, M. E. 11.

M. E. 21. *Materials of Construction*. This course comprises a study of the physical and mechanical properties, the occurrence or method of manufacture, the adaptability and use

of natural and artificial building stones, cements, mortars, concretes, timber, cast iron, wrought iron and steel.

Required of Seniors in Engineering, first semester, 1 hour. Prerequisite, M. E. 11.

M. E. 23. *Heating and Ventilating.* Methods of heating and ventilating buildings, direct steam, indirect heating, hot water, furnace, district heating, elements of heating, and ventilating systems. Calculation of heat required for rooms, and heating and ventilating design.

Required of Seniors in Mechanical Engineering, first semester, 3 hours. Prerequisite, M. E. 16.

M. E. 24. *Shop Organization.* The planning of factory buildings and influence of design on their productive capacity, staff and departmental organization, shop departments, office systems, employment of labor and efficiency, principles underlying good management.

Required of Seniors in Mechanical Engineering, second semester, 3 hours. Prerequisite, Senior Engineer.

M. E. 26. *Mechanical Engineering Laboratory.* Calibration and study of engineering test apparatus such as steam gages, indicators, planimeters, meters, speed counters, steam and fuel calorimeters, gas analysis, valve setting, technical sketches, written reports of tests.

Required of Juniors in Mechanical and Electrical Engineering, second semester, 4 hours practice. Prerequisite, Phys. 12 and M. E. 14.

M. E. 27. *Mechanical Engineering Laboratory.* Operation and performance tests of boilers, pumps, steam and gas engines, etc., with reports upon the same. For civil and irrigation engineers an abridged course is given covering work of M. E. 26 and 27 as outlined for mechanical and electrical engineers.

Required of Seniors in Engineering, first semester, 4 hours practice. Prerequisite, Phys. 12 and M. E. 14.

M. E. 28. *Mechanical Engineering Laboratory*. Tests of air compressor, power and refrigerating plant. Further work in steam and gas engines, written reports.

Required of Seniors in Mechanical Engineering, second semester, 4 hours practice. Prerequisite, M. E. 27.

M. E. 30. *Seminar*. Review of current engineering periodicals, abstracts and reports of papers.

Required of Seniors in Engineering, second semester, 1 hour.

Thesis for Degree of B. S. in M. E. Original investigation of some engineering problem to be decided upon by the Dean.

Required of Seniors in Mechanical Engineering, second semester, 4 hours.

M. E. 31. *Farm Motors*. Study, practice and trouble work of various types of farm motors such as steam and internal combustion engines, refrigerating plant, laboratory and recitations.

Required of Freshmen in Agriculture only, first semester, 2 hours plus 3 hours practice.

M. E. 33. *Free-hand Drawing*. Free-hand drawing, outline drawing from the blackboard, printing and title designing, perspective and relative proportions of simple objects gradually developing to sketches of more difficult objects, shop sketches with dimensions such as book cases, tables, etc., for use in shop work.

Elective for First Year Preparatory students, first semester, 3 hours practice.

M. E. 34. *Mechanical Drawing*. Instrumental drawing, ink work in lettering, use of instruments, inking, geometric drawing, orthographic projection, assembly and detail drawings of tools, machine parts, etc.

Elective for First Year Preparatory students, second semester, 3 hours practice.

EQUIPMENT.

Mechanical Laboratory. The main equipment in the mechanical laboratory consists of one 40-horsepower return tubular boiler, one 50-horsepower Hoppes feed water heater and purifier, one 30-horsepower Murray-Corliss engine, one 15-horsepower Witte gas engine, one 4-horsepower Fairbanks-Morse oil engine, besides several other gas and oil engines; one 8-horsepower Shipman steam engine and oil burning boiler, one compound two-stage air compressor, one complete $\frac{1}{2}$ -ton refrigerating plant. A Duplex steam pump and two $\frac{3}{4}$ -inch injectors are especially arranged for testing. In addition to this the laboratory is well equipped with test apparatus such as indicators, pressure gages, calorimeters, tachometers, weighing tanks, etc. The entire laboratory equipment is for experimental purposes and is so arranged that test work of all descriptions can be conducted with it.

Testing Materials Laboratory. The testing materials laboratory has an excellent equipment for making the various tests of metals, timber, brick, stone, cement and plain and reinforced concrete. A universal Olsen testing machine of 60,000 pounds capacity, together with all the necessary accessory attachments and apparatus such as extensometers, compressometers, deflectometers, spherical-seated vase-plates, beam loading apparatus, shearing tools, etc., serve in making tests in tension, compression, shears and flexure of the various materials of construction. The laboratory is further fully equipped for making all the standard tests of cement, with a U. S. standard Richle shot-type cement tension machine, Visat and Gilmore needle apparatus, le Chatelier specific gravity apparatus, sieves for fineness tests, steaming apparatus for accelerated tests on soundness, moist closets, etc. The laboratory equipment is constantly being added to and improved.

PRACTICAL MECHANICS.

The work in Practical Mechanics covers the various lines suggested in the following subjects: Machine Shops and Forging, Pattern Making and Foundry Practice, Woodwork, Shop Methods, Automobile and Gas Engine Practice, Manual Training.

M. E. 35. *Woodwork*. Practice in marking, gaging, sawing, planing, advancing as rapidly as possible in the various joints used in carpentry work to making equipment for laboratories and offices.

Required of Freshmen in Engineering, first semester, 4 hours practice.

M. E. 36. *Pattern Making and Foundry Practice*. The practice in this course consists of making patterns from drawings and models, taking into consideration draft, finish and shrinkage. Owing to the limited equipment for Foundry Practice, this course is covered largely by lectures and trips to foundries with the instructor.

Required of Freshmen in Engineering, second semester, 4 hours practice.

M. E. 37. *Machine Shop and Forging*. This course consists of practice in chipping, filing, screw-cutting, tapen turning, chuck work, shaping, milling, gear cutting and general repair work for the various laboratory machinery and apparatus. The student makes special tools in the forge room, tempers and dresses them for use in the machine shop work.

Required of Sophomores in Engineering, elective for other students with sufficient preparation in Woodwork or General Forging or practical work of like nature, first semester, 4 hours practice.

M. E. 38. *Machine Shop and Forging*. A continuation of M. E. 37.

Required of Sophomores in Mechanical and Electrical Engineering, second semester, 4 hours practice.

M. E. 39. *Shop Methods*. This subject is an advanced course for Mechanical Engineers, taking up the practice in

commercial manufacture in all its phases especially from a financial standpoint.

Required of Seniors in Mechanical Engineering, first semester, 2 hours.

M. E. 41, 42. *Manual Training*. This course is to familiarize the student with the use and care of tools. Bench work, together with wood-working machinery constitutes the general outline of the work given. Students making small pieces of furniture such as book cases, small cupboards, music cases, folding screens, etc., may keep same by paying for the amount of material used.

Elective for First Year Preparatory students, first and second semester, 6 hours practice.

EQUIPMENT.

Machine Shop. One 16 in. engine lathe with compound rest and taper attachment, one 14 in. x 6 ft. standard engine lathe, one 12 in. x 5 ft. standard engine lathe, one 13 in. x 5 ft. engine lathe, one 24 in. x 6 ft. planer, one 14 in. shaper, one 22 in. power drill press, one small drill press, one Cincinnati milling machine, one power hack saw, one improved double wheel emery grinder, an assortment of chucks, small tools, etc.

Wood Shop. The wood shop equipment consists of 20 benches equipped with all necessary small tools for doing ordinary work, 6-10 in. lathes, one 8 in. x 10 ft. lathe, one combination rip and cut off saw, one Fox trimmer, one large grindstone, one foot power mortising machine, one band saw, one combination Oliver hand plane, one combination emery wheel, grinder and oil stone.

Both the Machine Shop and the Work Shop have individual tool rooms where supplies and special tools are kept and issued to the student and recorded on daily tool sheets.

Forge Shop. Twelve down draft forges, twelve anvils, one drill press, one swedge block and all necessary hammers, cutters, hardies and small tools.

The School of General Science

The School of General Science

FACULTY.

- GEORGE EDGAR LADD, Ph. D., President of College.
CLARENCE TURPIE HAGERTY, M. S., Professor of Mathematics
and Astronomy.
JOHN HENRY VAUGHAN, A. M., Professor of History and
Political Science.
DAYTON EUGENE MERRILL, M. S., Professor of Biology.
SHERMAN BROWN NEFF, Ph. D., Professor of English.
CLARENCE WILLIAM RUSSELL, A. B., Professor of Physical
Culture and Hygiene.
LOUIS ALLEN HIGLEY, Ph. D., Professor of Chemistry.
CHARLES BERRY NEWCOMER, Ph. D., Professor of Latin and
Modern Languages.
SAMUEL PRUITT HERREN, First Lieutenant U. S. Army, Re-
tired, Professor of Military Science and Tactics.
CHARLES HENRY KUNSMAN, M. S., Professor of Physics.
MIGUEL BOLANOS CACHO, Professor of Spanish.
MARY FRANCES WINNINGHAM, A. B., Instructor in Mathe-
matics and History.
FREDERICK CONRAD WORKENTHIN, A. M., Instructor in
Botany.
ZOE DONALDSON, A. M., Instructor in English.
FLOY EDNA FRENCH, Instructor in History.
EDA LOU WALTON, Instructor in Music.
BERNICE JACK SKINNER, A. B., Instructor in Commerce.

The School of General Science

The School of General Science comprehends the following departments of instruction:

- I Department of Biology.
- II Department of Business Education.
- III Department of Chemistry.
- IV Department of Economics.
- V Department of English.
- VI Department of Geology.
- VII Department of History and Political Science.
- VIII Department of Latin and Modern Languages.
- IX Department of Mathematics and Astronomy.
- X Department of Military Science and Tactics.
- XI Department of Music.
- XII Department of Physical Culture and Hygiene.
- XIII Department of Physics.
- XIV Department of Psychology and Pedagogy.

It is the aim of the School of General Science, in addition to supplementing the courses in Agriculture and Engineering, to offer a liberal college education to students who do not wish to specialize in either of these professions. Abundant opportunity is provided for advanced work in practically all of the fourteen different departments.

DEPARTMENT OF BIOLOGY.

PROFESSOR MERRILL

MR. WORKENTHIN

In the Department of Biology, instruction is given in the various phases of the biological sciences as a basis for the study of pure science or for the practical application of biology to other lines of work, such as Agriculture, Household Economics, etc. All branches of these last named lines of activity touch directly upon life in its various manifestations, so the need for a thorough understanding of the underlying principles of biology is clearly apparent. The following descriptions of the courses offered in the department will make more evident the close application of biology to the practical side of the student's education.

COURSES PRIMARILY FOR UNDERGRADUATES.

PREPARATORY.

The work in the preparatory courses in Zoology and Botany is elementary and general in character and designed to present the basic principles of each subject, to introduce the student to a limited number of types of the larger groups of animals and plants, and to give a foundation for the economic consideration of biology.

Biol. 1. *Elementary Zoology*. A course introductory to general biological principles through recitations, observation of animal life in the field, and the study of laboratory material illustrative of elementary morphology. Text-book, Linville and Kelley's *Text-book in General Zoology*. Professor Merrill.

Elective for Second Year Preparatory students, first semester,
3 hours plus 3 hours practice.

Biol. 2. *Elementary Botany*. An elementary course in botany to follow Biol. 1. It will deal with representatives of the four great groups of the plant kingdom, but mainly with the morphology and physiology of the flowering plants. Plant

life in the field will be studied as to factors governing growth and distribution, and a collection will be made of a limited number of local plants. Text-book, Bergen and Caldwell's *Practical Botany*. Mr. Workenthin.

Elective for Second Year Preparatory students, second semester, 3 hours plus 3 hours practice.

COLLEGE.

Besides the required courses of college grade, electives are offered in the various lines of biology. All students electing work must have completed the prerequisites noted under the various courses.

I

Biol. 11, 12. *General Botany*. The purpose of this course is to give the student a general knowledge of the morphology, evolution, and classification of plants, the structure of cells and tissues, and the physiology of the seed plants. Representative types, in the plant kingdom, beginning with the simple forms, are studied to show the development of the plant body, the increase in specialization of the reproductive process, and the adaptation of plants to dry land conditions. This course is well adapted to the needs of the students of agriculture. Text-book, Bergen and Davis' *Principles of Botany*. Mr. Workenthin.

Required of all Freshmen, excepting Engineers, first and second semester, 2 hours plus 3 hours practice.

II

Biol. 13. *General Zoology*. Lecture, text, field and laboratory work, giving deeper consideration of biological principles, morphology, and the ecologic and economic relations of animal life. Text-book Osborn's *Economic Zoology*. Professor Merrill.

Required of all Sophomores, excepting Engineers, first semester, 2 hours plus 3 hours practice.

Biol. 14. *Physiology*. Lectures and recitations on general physiology, based on human physiology and with sufficient reference to everyday hygiene. In the laboratory the studies of human anatomy from models, casts, charts, etc., will be supplemented by studies of general mammalian anatomy, of slides illustrating the fundamentals of histology, and with exercises to demonstrate certain physiologic processes. Text-book Martin's *Human Body*. Professor Merrill.

Required of all Sophomores, excepting Engineers, second semester, 3 hours plus 2 hours practice. Prerequisite, Biol. 13.

Biol. 16. *Bacteriology*. Lectures and laboratory work on the principles of sterilization and the technique of isolation, morphology, taxonomy, and physiology of bacteria. Special attention is given to the bacteriological analysis of water, milk, and soils. Text-book, Buchanan's *Household Bacteriology*. Mr. Workenthin.

Required of all Sophomores, excepting Engineers, second semester, 2 hours plus 3 hours practice. Prerequisite, Biol. 11 and 12.

III

Biol. 17. *Introductory Entomology*. Lectures, recitations, field and laboratory work giving a general knowledge of the structure and habits of the insects and their near allies. Laboratory work on the detailed study of the anatomy of the grasshopper, comparative study of other types, and the collection, pinning and classification of insects will give the student ample opportunity to acquaint himself with many phases of insect life. The economic side of the study will be touched upon. Text-book, Sanderson and Jackson's *Elementary Entomology*. Professor Merrill.

Required of Juniors in Agriculture, elective to others if facilities permit, first semester, 2 hours plus 2 hours practice. Prerequisite, Biol. 13.

Biol. 18. *Applied Entomology*. A continuation of Biol. 17. Further study of comparative types of structure, methods

of reservation and preparation for study, and life history studies will be taken up. In addition much time will be given to a study of the species affecting crops in New Mexico and to general methods for investigation and control of injurious species. Text-book, Smith's *Economic Entomology*. Professor Merrill.

Required of Juniors in Agriculture, second semester, 1 hour plus 3 hours practice. Prerequisite, Biol. 17.

Biol. 19. *Plant Histology*. This is primarily a laboratory course and is devoted to a consideration of methods in micro-technique, including killing, imbedding, section cutting, staining and mounting of plant tissues, and the use of camera lucida. The preparation of a series of permanent slides illustrating the microscopic structure of plants is a part of the required work. Text-book, Stevens' *Plant Anatomy*. Mr. Workenthin.

Required of Juniors in Horticulture and Agronomy, elective to others, first semester, 1 hour plus 3 hours practice. Prerequisite, Bio. 11 and 12.

Biol. 20. *Plant Pathology*. A continuation of Biol. 19. Takes up the causes of the diseases of plants and methods of prevention or remedy. The laboratory work will deal largely with the more important diseases of economic plants caused by fungi and bacteria, including the study of symptoms, pathological anatomy, and life history of the causal organisms with the employment of culture methods. Text-book, Duggar's *Fungous Diseases of Plants*. Mr. Workenthin.

Required of Juniors in Horticulture and Agronomy, elective to others, second semester, 2 hours plus 3 hours practice. Prerequisite, Biol. 19.

ELECTIVES.

Biol. 21. *Ornithology*. A general course on habits, distribution, economic importance and taxonomy of the southwestern birds. Bailey's *Handbook of the Birds of Southwest-*

ern United States will be used for identification work. Professor Merrill.

Elective, hours to be arranged. Prerequisite, Biol. 1 or 13.

Biol. 23. *Plant Physiology*. This course will give a more detailed study of the physiology of plants, emphasis being laid upon the relation this study bears to scientific plant production. The laboratory work will consist of experimental study of physiological processes of higher plants. Text-book, Duggar's *Plant Physiology*. Mr. Workenthin.

Elective, first semester, 1 hour plus 3 hours practice. Prerequisite, Biol. 11 and 12.

Biol. 25. *Systematic Zoology*. An advanced course giving opportunity for further study in the local fauna or in some definite group of animals. Professor Merrill.

Elective, hours to be arranged. Prerequisite, Biol. 13 or 17.

Biol. 27. *Systematic Botany*. An advanced course giving opportunity for further study in the local flora or in some definite group of plants. Mr. Workenthin.

Elective, hours to be arranged. Prerequisite, Biol. 11 and 12.

Thesis. Opportunity is given to students completing the requirements of biology to prepare theses along lines of selected or assigned problems for investigation.

GRADUATE WORK.

All electives not pursued in undergraduate courses will be accepted as minors for graduate work. For credit in major graduate work a student must do not less than 12 credit hours throughout the year.

EQUIPMENT.

The Department of Biology occupies five rooms on the second floor of the Science Hall. One large room is used as a general laboratory for zoology, physiology and elementary botany. It is equipped with water and gas and contains a large

number of prepared slides, models, casts, skeletons and preserved materials for laboratory work in the above subjects, as well as for class demonstration. A second large room is used for botanical and bacteriological work, and for a research laboratory in pathological work. It is equipped with water, gas, tables, a wide assortment of apparatus, glassware and reagents of various kinds. A small greenhouse in connection with this room gives a few added facilities for work along these lines.

A third room is used for the Herbarium. In it are upwards of 35,000 sheets of specimens representing approximately ninety per cent of the flora of New Mexico.

A fourth room contains the ornithological and entomological collections, the United States Geological Survey collection of rocks, several hundred fossils and casts, besides maps and charts, and common minerals that are used in instruction in geology. A small hall room in connection with this is used as a sort of insectary.

The fifth room is used as an office for the department and contains the departmental library of over 500 volumes, besides a great many bulletins, and pamphlets.

DEPARTMENT OF BUSINESS EDUCATION.

MR. SKINNER.

The purpose of the courses in the Department of Business Education is to supply facilities for the training of young people who desire to enter upon business careers. Subjects peculiar to the courses are listed below. These are supplemented with correlated subjects given in other departments.

The department is supplied with twenty of the latest model typewriters. Machines necessary for the work in office practice are a part of the equipment used by the students.

Credits not in excess of three units will be allowed in Stenography and Typewriting toward the completion of the regular preparatory course.

B. E. 1. *Typewriting*. This subject consists of practice work in typewriting. The touch system is used and the student is required to transcribe manuscripts and printed matter neatly and free from mistakes at a reasonable rate of speed.

Elective for Preparatory and Industrial students, first semester, 5 or 10 hours practice.

B. E. 2. *Typewriting*. This is a continuation of B. E. 1, and is chiefly devoted to the construction and writing of business letters in conformity with standard forms, and work in tabulated statements.

Elective for Preparatory and Industrial students, second semester, 5 or 10 hours practice.

B. E. 3. *Stenography*. The work in this course is elementary in character, being a thorough study of the principles of shorthand.

Elective for Preparatory and Industrial students, first semester, 5 hours.

B. E. 4. *Stenography*. The work in this course is more advanced, covering word signs and outline drill as well as introducing a good deal of business and other dictation.

Elective for Preparatory and Industrial students, second semester, 5 hours.

B. E. 5. *Business English*. This course consists of a very thorough discussion of all forms of letters employed in business correspondence, and of points of business etiquette demanded by such correspondence.

Elective for Preparatory and Industrial students, first semester, 5 hours.

B. E. 7. *Commercial Arithmetic*. The work in this course gives the student a thorough drill in the problems that come up in every day business life. Correct methods in addition, short cuts in multiplication, and check methods of proving results, are made subjects for class drill. Problems involving weights, volumes, dimensions, time, foreign and domestic exchange, are given for oral and written work, the subject of percentage is also thoroughly mastered.

Elective for Second and Third Year Preparatory students and students in Industrial courses qualified to take the work, first semester, 5 hours.

B. E. 8. *Industrial Geography of the United States*. The first part of this course consists in a classification and study of the chief products entering into commerce, the conditions governing their production, and the chief sources of supply. A detailed study is then made of the industrial regions of the United States. The climatic conditions, soil, etc., affecting production are discussed, and agricultural, mining, fishing, and manufacturing industries located. Interstate commerce and our foreign trade are important subjects dwelt

upon. A careful study is made of the Southwest, and of New Mexico in particular.

Elective for Second and Third Year Preparatory students and students in Industrial courses qualified to take the work, second semester, 5 hours. Prerequisite, Geol. 1 and 2.

B. E. 10. *Commercial Law*. The work covers the chief principles underlying the law of contracts in general, negotiable instruments, agency, partnership, corporations, sales, public service companies, insurance and real estate.

Elective for Fourth Year Preparatory students and students in Industrial courses qualified to take the work, second semester. 4 hours.

DEPARTMENT OF CHEMISTRY.

PROFESSOR HIGLEY.

Students desiring to pursue a four years' course in chemistry at this institution may do so by registering in the School of General Science and choosing their electives in the Sophomore, Junior and Senior years from the courses in chemistry which are listed below. Instruction is given by means of lectures accompanied by demonstration experiments, recitations, and laboratory work. In the Industrial courses in Agriculture and Household Economics, and the Freshman courses in college laboratory, the work consists of a study of the properties of the elements, demonstrations by actual experiment of the fundamental chemical laws, detection and preparation of simple substances and the separation of inorganic compounds. This laboratory work is followed in the Sophomore, Junior and Senior years by the quantitative analysis of salts, minerals, soils, fertilizers, waters, foods, feeding stuffs, insecticides, fungicides, and various agricultural products.

The instruction in advanced chemistry relates to the manufacturing industries, physiological chemistry, soils and fertilizers, and the chemistry of plant and animal life.

A year's course is offered to those who wish to become practical assayers. Those students taking this work must also take the courses offered in general chemistry, mineralogy, and geology.

The courses in this department give a general survey of the subject, and furnish a foundation for a practical application in engineering, chemistry and agriculture.

SECONDARY COURSES.

Chem. 1. *Introductory Chemistry.* A course for preparatory students. The work is based upon such texts as McPherson and Henderson's *Elementary Study of Chemistry and Exercises in Chemistry*.

Required of Fourth Year Preparatory students expecting to enter college courses in Household Economics, elective for other Fourth Year Preparatory students, first semester, 4 hours plus 2 hours laboratory.

Chem. 2. *Introductory Chemistry* A continuation of Chem. 1.

Required of Fourth Year Preparatory students expecting to enter college courses in Household Economics, elective for other Fourth Year Preparatory students, second semester, 4 hours plus 2 hours laboratory.

COLLEGE COURSES

Chem. 11. *General Chemistry.* A study of the principles of chemistry as given in McPherson and Henderson's course in *General Chemistry*.

Required of Freshmen in all college courses, first semester, 3 hours plus 3 hours laboratory.

Chem. 12. *General Chemistry and Qualitative Analysis.* This course is in part a continuation of the previous semester's work in general chemistry, and in addition a course in qualitative analysis is included that consists principally of laboratory experiments in qualitative analysis.

Required of Freshmen in all college courses, second semester, 3 hours plus 3 hours laboratory. Prerequisite, Chem. 11.

Chem. 13. *Organic Chemistry.* A study of the hydrocarbons and their derivatives as outlined in such texts as Remsen's *Organic Chemistry*.

Required of Sophomores in General Science and Household Economics, first semester, 4 hours. Prerequisite, Chem. 12.

Chem. 14. *Advanced Organic Chemistry*. A continuation of Chem. 13.

Elective for Sophomores in General Science and Household Economics, second semester, 2 hours plus 6 hours laboratory. Prerequisite, Chem. 13.

Chem. 15. *Quantitative Analysis*. Mostly laboratory work. Evans' Quantitative Chemical Analysis and other suitable texts are used.

Required of students in General Science whose major is Chemistry, first semester, 10 hours laboratory. Prerequisite, Chem. 12.

Chem. 17. *Advanced Qualitative Analysis*. A course in the qualitative analysis of the more difficult substances such as alloys, rocks, minerals, paints, and insoluble compounds.

Required of students in General Science whose major is Chemistry, first semester, 10 hours laboratory. Prerequisite, Chem. 12.

Chem. 18. *Agricultural Chemistry*. Ingle's Manual of Agricultural Chemistry. Mostly laboratory work in which the A. O. A. C. methods of the United States Department of Agriculture, Lincoln & Walton's Agricultural Chemical Analysis, and such other texts as are best suited to agricultural analysis, are used.

Required of Sophomores in Agriculture, second semester, 2 hours plus 6 hours laboratory. Prerequisite, Chem. 13.

Chem. 19. *Industrial Analysis*. The analysis of various substances such as fuels, minerals, metals, alloys, cements, clays, paints, oils, etc., is included under this heading.

Elective for Juniors and Seniors in General Science with major in Chemistry, first semester, 10 hours laboratory. Prerequisite, Chem. 15.

Chem. 20. *Industrial Analysis*. A continuation of Chem. 19.

Elective for Juniors and Seniors in General Science with major in Chemistry, second semester, 10 hours laboratory. Prerequisite, Chem. 19.

Chem. 21. *Assaying and Metallurgical Analysis*. For the accommodation of those students in the General Science course who desire to elect the subject of assaying, a course in dry assaying of gold, silver and lead ores is offered. During this semester some work is also begun in the wet assay of the commoner metals. Furman's Manual of Assaying and Low's Technical Methods of Ore Analysis are used as texts.

Elective for Juniors and Seniors in General Science with major in Chemistry, first semester, 10 hours laboratory. Prerequisite, Chem. 12.

Chem. 22. *Assaying and Metallurgical Analysis*. Continuation of Chem. 21, including a study of the methods of analysis of the metals.

Elective for Juniors and Seniors in General Science with major in Chemistry, second semester, 10 hours laboratory. Prerequisite, Chem. 21.

Chem. 23. *Metallurgy*. This is a one semester course in the elementary metallurgy of the useful metals.

Required of Juniors in Mechanical and Electrical Engineering, first semester, 3 hours.

Chem. 25. *Advanced Agricultural Chemistry*. This is a continuation of Chem. 18. , and consists of the analysis of soils, waters, feeding stuffs, fertilizers, and various animal and vegetable products. It is intended as an elective for those who wish to fit themselves as agricultural analytical chemists.

Elective for Juniors and Seniors in General Science with major in Chemistry, first semester, 10 hours laboratory. Prerequisite, Chem. 18.

Chem. 27. *Food Analysis*. This is a course to fit the student for the position of food analyst. It is principally laboratory work in testing the composition of food and its adulteration. It should be preceded or accompanied by a

course in microscopy and bacteriology. Leach's Food Inspection and Analysis, Publications of the Bureau of Chemistry, United States Department of Agriculture.

Elective for Juniors and Seniors in General Science, first semester, 10 hours laboratory. Prerequisite, Chem. 13.

Chem. 29. *Physiological Chemistry*. This consists of a course in the chemistry of the physiological processes in plants and animals.

Elective for Seniors in General Science with major in Chemistry, first semester, 3 hours.

Chem. 30. *Physiological Chemistry*. A continuation of Chem. 29.

Elective for Seniors in General Science with major in Chemistry, second semester, 4 hours practice.

Chem. 31. *Industrial Chemistry*. This is a study of the chemical principles involved in the various methods for the manufacture of acids, alkalies, glass, cements, alcohol, vinegar, and in the practices followed in similar industries.

Elective for Seniors in General Science with major in Chemistry, first semester, 3 hours plus 4 hours laboratory.

Chem. 32. *Industrial Chemistry*. A continuation of Chem. 31.

Elective for Seniors in General Science with major in Chemistry, second semester, 2 hours.

Chem. 33. *Household Chemistry*. This course is intended for students in Household Economics. It consists of lectures and laboratory experiments in the chemistry of the household and of food and nutrition. The fundamental principles of organic chemistry are also taken up.

Required of Sophomores in Household Economics, first semester, 3 hours plus 2 hours laboratory. Prerequisite, Chem. 2.

Chem. 34. *Household Chemistry*. A continuation of Chem. 33.

Required of Sophomores in Household Economics, second semester, 3 hours plus 2 hours laboratory. Prerequisite, Chem. 33.

Chem. 35. *Research*. This is a laboratory course in thesis work.

Elective for Seniors in General Science with major in Chemistry, first semester, 4 hours laboratory.

Chem. 36. *Research*. A continuation of Chem. 35, intended to be used to supplement the time allowed for thesis.

Required of Seniors in General Science with major in Chemistry, second semester, 10 hours laboratory.

Chem. 37. *Mineralogy*. This course is principally determinative mineralogy, but crystallography and descriptive mineralogy are also briefly studied.

Required of Seniors in General Science, first semester, 6 hours laboratory.

Not all elective courses will be offered in any one year.

DEPARTMENT OF ECONOMICS.

PROFESSOR VAUGHAN.

Econ. 1. *Elementary Economics.* The purpose of this course is to give the student a knowledge of those human relations which have to do primarily with wealth, its production and distribution. The course will include also much material which might be classed under sociology, politics and ethics. The manner of treatment will be simple, concrete and practical. Professor Vaughan.

Elective for Fourth Year Preparatory students, first semester, 4 hours.

Econ. 11. *Economics.* A course devoted to the study of the principles of economics and their application to the conditions and problems of the United States at the present time. An effort will be made to acquaint the student sufficiently with actual economic and industrial conditions in the United States, and particularly in the West, that he may be an intelligent student of public affairs and a useful participant in them. Professor Vaughan.

Required of Juniors in all college courses, first semester, 3 hours.

Econ. 12. *Economic Problems.* A study of the leading problems in the present-day economic life of the people of New Mexico and the United States, with especial reference to the rural population. Professor Vaughan.

Required of Juniors in all college courses except Agriculture and Engineering, second semester, 2 hours.

SOCIOLOGY.

Sociol. 2. *Sociology*. During the second semester the preceding study of economic principles will be made the basis for a more detailed study of the principles of sociology and the most pressing social problems of the present day. Professor Vaughan.

Required of Juniors in all college courses, second semester,
2 hours.

DEPARTMENT OF ENGLISH.

PROFESSOR NEFF

MISS DONALDSON

The courses in the Department of English are designed with two main purposes in view. They are intended, in the first place, to teach the student how to write and speak good English, and, in the second place, to cultivate in his mind a taste for the best literature. These two purposes, it is believed, are in keeping with the needs of all students, regardless of the general course they are pursuing.

No student, whose knowledge of spelling and grammar is deficient, will be admitted to college classes in English, and the department reserves to itself the right to examine in English, should it deem it advisable, any student entering college classes in that subject.

SECONDARY COURSES.

Eng. 1, 2. *First Year Preparatory English.* A thorough drill in the elements of grammar and composition, together with a study of the following classics: *The Merchant of Venice*, *The Deserted Village*, *Ivanhoe*, and selections from *The Sketch Book*. Miss Donaldson.

Required of First Year Preparatory students, first and second semester, 5 hours.

Eng. 3, 4. *Second Year Preparatory English.* Grammar and composition. *Julius Caesar*, selections from American poets, *A Tale of Two Cities*, and Maculay's *Life of Johnson*. In connection with the readings from American poets, a short history of American literature will be studied. Miss Donaldson.

Required of Second Year Preparatory students, first and second semester, 5 hours.

Eng. 5, 6. *Third Year Preparatory English*. Grammar and composition. *Macbeth*, *Idylls of the King*, *Silas Marner*, and *The Sir Roger De Coverley Papers*. Professor Neff.

Required of Third Year Preparatory students, first and second semester, 5 hours.

Eng. 7, 8. *Fourth Year Preparatory English*, Grammar and composition. Chaucer's *Prologue to The Canterbury Tales*, *Hamlet*, Milton's *Minor Poems*, Burke's *Speech on Conciliation*, and Carlyle's *Essay on Burns*. A short history of English literature will be studied. Professor Neff.

Required of Fourth Year Preparatory students, first and second semester, 5 hours.

Eng. 9, 10. *Special English for Spanish-American Students*. Intended primarily for Spanish-American students who are not yet sufficiently familiar with the English language to qualify for the regularly prescribed courses.

First and second semester, 5 hours.

COLLEGE COURSES.

Eng. 11, 12. *Rhetoric and Composition*. Daily themes. Lectures. Recitations. In this course a systematic study will be made of the fundamental principles underlying English composition, and a great deal of time will be given to actual practice in theme-writing. Miss Donaldson.

Required of Freshmen in all college courses, first and second semester, 3 hours.

Eng. 13, 14. *Advanced English Composition*. Professor Neff.

This course is open to those students who have completed in a satisfactory way the work of the Freshman year, first and second semester, 2 hours.

Eng. 15, 16. *English Poets of the Nineteenth Century*. As much as possible of the poetry of the nineteenth century will be read. Special attention will be given to the most important works of Wordsworth, Coleridge, Byron, Shelley, Keats, Tennyson, Browning, Rossetti, Arnold, and Swinburne. Professor Neff.

Elective for Sophomores, Juniors and Seniors, and, with the consent of the instructor, for Freshmen, first and second semester, 3 hours.

Eng. 17, 18. *Shakespeare*. Class room study and interpretation of five or six selected plays, and extensive outside reading. Professor Neff.

Except with the consent of the instructor, this course is open to Juniors and Seniors only, first and second semester, 3 hours.

SUPPLEMENTARY READING.

All students in English courses that are not elective will be required, in addition to their regular class room work, to read and make written reports on at least three books of standard fiction and one book of biography or essays. The object of this requirement is to get students to form the reading habit early, and to direct their reading in a judicious way.

DEPARTMENT OF GEOLOGY.

PRESIDENT LADD

PROFESSOR RUSSELL

The work in Geology is taught by lectures and recitations with prescribed text-book reading. Occasional field work is arranged for as often as circumstances will permit.

SECONDARY COURSES.

Geol. 1. *Physiography*. This course is intended to lay a foundation for the student's scientific training by considering the physical agencies at work on the earth. An important part of the course is observing the effect of soil-topography and climate on the distribution of plants and animals, and their relation to human industries. One double period per week is given to laboratory work or to field excursions.

Required of First Year Preparatory students, first semester, 3 hours plus 3 hours practice.

Geol. 2. *Physiography*. A continuation of Geol. 1.

Required of First Year Preparatory students, second semester, 3 hours plus 3 hours practice.

COLLEGE COURSES.

Geol. 11. *General Geology*. This course includes dynamical, structural, and physiographic geology, considerable stress being laid upon rocks, rock-making minerals and their derivative soils. The required field trip will cost each student \$7.50.

Required of Seniors in General Science, Agriculture and Civil Engineering, first semester, 4 hours.

Geol. 12. *Historical Geology*. A detailed treatment of the history of the Earth, together with some elementary work in paleontology.

Required of Seniors in General Science, second semester, 4 hours.

DEPARTMENT OF HISTORY AND POLITICAL SCIENCE.

PROFESSOR VAUGHAN

MRS. WINNINGHAM

MISS FRENCH

SECONDARY COURSES.

Hist. 1. *General History*. A rapid survey of the leading nations of the world from the dawn of recorded history down to the time of Charlemagne, 800 A. D. Miss French.

Required of Second Year Preparatory students, first semester, 5 hours.

Hist. 2. *General History*. Modern history from Charlemagne to the present time. Miss French.

Required of Second Year Preparatory students, second semester, 5 hours.

Hist. 3. *American History*. A comprehensive survey of British-American colonial history, the Revolution, and the development of the United States. Mrs. Winningham.

Required of Third Year Preparatory students, first semester, 5 hours.

Hist. 4. *American Government*. A study of the organization, machinery, and operation of actual government under American conditions. Mrs. Winningham.

Required of Third Year Preparatory students, second semester, 5 hours.

COLLEGE COURSES.

Hist. 11. *Modern Europe*. A rapid survey of European history from the beginning of the sixteenth century to the fall of Napoleon. The Reformation and the French Revolution are studied in some detail. Professor Vaughan.

Required of all Juniors, except those in Engineering and Agriculture, first semester, 3 hours.

Hist. 12. *Modern Europe*. A course dealing with the history of Europe from 1815 to the present time. Special attention is given to the great reform movements of the century and to contemporary government and politics. Professor Vaughan.

Required of all Juniors, except those in Engineering and Agriculture, second semester, 3 hours.

Hist. 13. *American History to 1815*. A survey of the colonial beginnings of the United States, followed by an exhaustive study of the Revolution, the formation of the Union, the organization of the government under Washington, the solution of the most pressing problems of the new nation at home and abroad, and the development of American political, social and economic institutions to the close of the War of 1812. Professor Vaughan.

Required of Seniors in General Science and Household Economics, first semester, 3 hours.

Hist. 14. *American History since 1815*. Political, social, economic, and constitutional growth of the United States from 1815 to the present time. The rise of the West, slavery, and states' rights, division and reunion, reconstruction, the triumph of nationalism, labor movements, socialism, the Spanish War and imperialism, the United States a World Power, the government of American dependencies. Professor Vaughan.

Required of Seniors in General Science and Household Economics second semester, 3 hours.

Hist. 16. *New Mexico History and Government*. A systematic study with text-books, assigned readings, and lectures. Professor Vaughan.

Elective, second semester, 5 hours.

POLITICAL SCIENCE.

Pol. Sci. 2. *International Law*. The development of the law of nations, its nature, source, and present status; the equality of states and the doctrine of intervention; the laws of war and peace; the obligations of neutrals; international arbitration. Professor Vaughan.

Elective for Juniors and Seniors by arrangement with instructor, second semester, 3 hours.

DEPARTMENT OF LATIN AND MODERN LANGUAGES.

PROFESSOR NEWCOMER

PROFESSOR CACHO

In this department courses are offered in Latin, Spanish, French and German. Emphasis in each course is placed upon the practical; in Latin, grammar, study of roots, word formation and translation are emphasized; in Spanish, reading, writing and speaking; in German, reading and translation.

The work in Latin is confined to the College Preparatory course. A four years' course is offered. The work of the third and fourth years is optional, Spanish being offered as an alternative.

LATIN.

Lat. 1, 2. *Elements of Latin.* In the first year's work the attention is directed mainly to the study of accidence and the elements of syntax, with constant drill upon the same. A limited vocabulary is acquired by means of easy exercises in reading, translation and composition. Professor Newcomer.

Elective for First Year Preparatory students, first and second semester, 5 hours.

Lat. 3, 4. *Latin Readings.* The second year's work consists of careful reading of selections from Caesar's Gallic War and other sources, review of grammar, and exercises in Latin composition based upon the text. Professor Newcomer.

Elective for Second Year Preparatory students, first and second semester, 5

Lat. 5, 6. *Orations of Cicero.* Six orations are read. Stress is laid upon accuracy of interpretation, keeping in view the distinctive features of this type of literature. Studies in

syntax, with Latin composition based upon the text. Professor Newcomer.

Elective for Third Year Preparatory students, first and second semester, 4 hours. Prerequisite, Lat. 3 and 4.

Lat. 7, 8. *Vergil's Aeneid*. The usual secondary work in this subject. Professor Newcomer.

Elective for Fourth Year Preparatory students, first and second semester, 4 hours. Prerequisite, Lat. 5 and 6.

SPANISH.

Sp. 1,2. *Elements of Spanish*. Grammar, drill upon forms, easy reading. Particular attention is given to pronunciation, writing from dictation, and simple conversation. Professor Cacho.

Elective, first and second semester, 4 hours for College students, 5 hours for Preparatory students.

Sp. 3,4. *Spanish Readings*. Prose works, selections from modern writers. Review of grammar, writing from dictation, reproductions from memory, original composition and speaking. Professor Cacho.

Elective for College and Preparatory students, first and second semester, 4 hours. Prerequisite, Sp. 1 and 2.

GERMAN.

Ger. 1, 2. *Elements of German*. Study of grammar, drill upon forms, easy reading and translation, writing from dictation, practice in pronunciation and simple conversation. Professor Newcomer.

Elective for students in all college courses, first and second semester, 4 hours.

Ger. 3, 4. *German Readings*. Selected matter of moderate difficulty. Review of grammar, exercises in translation, practice in writing from dictation, reproductions from memory, speaking. Professor Newcomer.

Elective for students in all college courses, first and second semester, 3 hours. Prerequisite, Ger. 1 and 2.

FRENCH.

Fr. 1, 2. *Elements of French*. This course will embrace work similar to that given in the first year in Spanish and German. Professor Newcomer.

Elective for students in all college courses, first and second semester, 5 hours.

DEPARTMENT OF MATHEMATICS AND ASTRONOMY.

PROFESSOR HAGERTY

MRS. WINNINGHAM

Since the work of this institution is largely technical in its character, considerable attention is given to the utility phase of mathematical subjects, but the culture phase is by no means lost sight of. Astronomy is taught almost wholly for its culture value.

SECONDARY COURSES.

Math. 1, 2. *Elementary Algebra*. The connection of Algebra with Arithmetic is kept constantly before the student, and the solution of an unusually large number of practical problems constitutes the main part of the work, since the purely thoretical side of the subject receives full consideration later in the advanced algebra. The text-book completed is Slaught and Lennes' High School Algebra. Mrs. Winningham.

Required of First Year Preparatory students, first and second semester, 5 hours.

Math. 3, 4. *Plane Geometry*. In this course Wentworth's Plane Geometry is completed, including about five hundred of the original exercises. Mrs. Winningham.

Required of Second Year Preparatory students, first and second semester, 5 hours.

Math. 5. *Solid Geometry*. In this course Wentworth's Solid Geometry is completed, including many of the original exercises. Professor Hagerty.

Required of Third Year Preparatory students expecting to enter college courses in General Science or Engineering, first semester, 5 hours.

Math. 6. *Advanced Algebra*. This course includes a review and a more complete treatment of all topics of the first

year course in algebra, and special emphasis is given the following: involution, evolution, quadratic equations, radicals, imaginary and complex numbers, ratio, proportion, variation, and theory of exponents, including logarithms. The text-book used is Slaught and Lennes' High School Algebra. Professor Hagerty.

Required of Third Year Preparatory students expecting to enter college courses in General Science or Engineering, second semester, 5 hours.

Math. 7. *Higher Arithmetic*. This course consists of a general review, and a consideration of topics not previously studied. The applied problems are of a practical nature, referring largely to questions arising in the laboratory and in ordinary commercial life. Lyman's Advanced Arithmetic is the text-book used. Professor Hagerty.

Elective for Fourth Year Preparatory students, first semester, 5 hours.

COLLEGE COURSES.

Math. 11, 12. *Plane Trigonometry, College Algebra, Analytic Geometry*. Twelve weeks is given to the study of each of these subjects in the order in which they occur above. In *Trigonometry* both the theoretical and the practical side receive careful consideration. Many formulas are developed and the applications cover a wide field including problems in heights, distances, surveying, and physics.

The course in *College Algebra* includes a review of quadratics and covers the following subjects: progressions, inequalities, undetermined coefficients, indeterminate equations, the binominal theorem for all rational exponents, permutations and combinations, variables and limits, series, and the elements of the theory of equations.

In *Analytic Geometry* a detailed study of the following topics is made: straight line, circle, transformation of coor-

dinates, parabola, ellipse, hyperbola, general equations of the second degree, and a few of the higher plane curves. Both rectangular and polar coordinates are used. Professor Hagerty.

Required of Freshmen in the Engineering courses, first and second semester, 5 hours.

Math. 13, 14. *Differential and Integral Calculus.* The topics treated in this course are those usually taken up in accordance with well established usage. Many practical problems in analytic geometry and mechanics are solved by the students in order to fix the principles in their minds and to maintain their interest. Campbell's *Differential and Integral Calculus* is the text-book used. Professor Hagerty.

Required of Sophomores in the Engineering courses, first and second semester, 4 hours.

ASTRONOMY.

Astron. 2. *General Astronomy.* In this course are studied not only astronomical facts and principles, but also the methods by which the facts have been ascertained. The work is conducted by lectures, recitations, and solar and night observations. The determination of the meridian, latitude, and longitude are among the practical problems assigned, and by means of the instruments at the disposal of the students quite accurate results are obtained. Young's *Manual of Astronomy* is the text-book used. Professor Hagerty.

Required of Juniors in General Science, second semester, 3 hours.

Astron. 3. *General Astronomy.* This course is a continuation of Astron. 2, but may be taken independently.

Required of Seniors in General Science, first semester, 2 hours.

EQUIPMENT.

This department has a 6-inch portable, equatorially mounted refracting telescope, a transit theodolite having an 8-inch horizontal circle reading to 10'' and a 6-inch vertical circle reading to 30'', an 18-inch celestial globe, a Bausch and Lomb-Zeiss stereobinocular magnifying $7\frac{1}{2}$ diameters, two star lanterns with slides, star atlases, planisphere, 18-inch slated globe, a set of stereoscopic views of the figures for the theorems in solid geometry, the Ross mensuration blocks and dissected geometrical solids, a Thatcher's calculating instrument, protractors, etc.

The department library contains many valuable books of reference, and receives several periodicals.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS

PROFESSOR HERREN.

The primary object of this department is to furnish the country each year with a class of young men who are fitted to become efficient officers of volunteers in time of war.

For this reason the department is fostered by the United States government, and is practically maintained by it without expense to the College.

The professor is an officer of the army detailed for this duty by the President of the United States, and the equipment — of the value of about \$5,000 — is issued to the College by the War Department. It includes two pieces of artillery with their accompanying limbers, cadet rifles and bayonets, belts, and a yearly allowance of ammunition for target practice.

The military course is required to be taken by all physically qualified male students of the college, preparatory or industrial course, in regular or special classes, except Juniors, Seniors, and graduate students.

The department offers the following comprehensive course of instruction:

Practical. Infantry drill regulations, through the school of the battalion, the ceremonies of battalion parade, review and inspection, guard mounting, escort of colors, marches, outposts, advance and rear guards, etc.; field service regulations; manual of guard duty; firing regulations for small arms, with gallery and target practice. Whenever practicable an annual encampment of a week's duration will be held. All students in the military department will be required to attend.

Theoretical. This includes the portions of the above subjects covered by the practical instruction, and may be supplemented by lectures.

Aside from its benefit to the country in time of war,

this course is of great and immediate value to the individual student. The drills and exercises are mild forms of physical training, giving an erect and graceful carriage and correcting the bad habits of body to which students are prone. But their chief value to the student lies in the mental and moral discipline they afford, for, by their practice, he acquires the habit of self control, respect for authority, and the fitness to exercise it.

Uniform. Each student classified for the military course will be required to deposit with the Registrar at the time of registration the price of the adopted uniform, see page 30. The uniform of a cadet consists of the regulation cap, an olive drab coat, two olive drab shirts, two pairs of olive drab breeches, and army regulation leggins. Tan shoes are required to go with the uniform.

The uniform of the college must be worn by all students in the Military Department on regular school days and at such other times as the commandant may direct. It shall be worn in military manner, complete, and not combined with articles of civilian clothing. Other male students may wear the uniform under regulations prescribed for those students in the Military Department except that insignia of rank in the Cadet Corps must be omitted. This prohibition does not apply to special, social, or ceremonial occasions.

DEPARTMENT OF MUSIC.

MISS WALTON.

This institution offers excellent facilities for the study of music. The work of the department includes a Military Band, an Orchestra, a Choral Society, and private work in Piano.

Band. A military band of about twenty pieces has been organized in connection with the Cadet Battalion. Students who have the necessary musical ability are detailed for this work, which takes the place of regular military drill. Band practice is held on three days of the week at the drill hour and the band participates regularly in battalion formations. The College owns a full set of band instruments, which are loaned free of charge to members of the band.

Orchestra. An orchestra of about twelve pieces has been formed. The work of the orchestra is entirely voluntary. Students who participate in it receive a great deal of excellent musical training without cost. The orchestra has frequently appeared on public occasions.

The course in Piano Music varies to meet the need of each individual student. The training is not alone for the acquirement of finger dexterity, but for a more comprehensive idea of pianoforte music.

College students whose courses admit of electives, may receive credit for their work when two private lessons a week are taken and not less than two hours a day are devoted to practice. A maximum of credit not to exceed ten units will be allowed toward college graduation,—a unit to be the equivalent of one hour a week of music lessons for eighteen weeks. In every case where college credit is desired, application should be made at the beginning of the session.

The college owns five pianos which are at the disposal of students taking private lessons.

The charge for private lessons in Piano, one lesson a week for one semester, is \$18.00

DEPARTMENT OF PHYSICAL CULTURE AND HYGIENE.**PROFESSOR RUSSELL.**

As a preliminary to the work of this department all students, both boys and girls, are required to take a physical examination consisting of measurements and strength tests. This examination is given at the beginning of each term so students in regular attendance at the institution will have a direct check upon their physical development. It also affords the director a basis for the selection of material for the various athletic teams.

For the girls gymnasium classes are conducted four days each week. All girls are required to attend at least three days per week. Part of each period is devoted to class exercises of the body building type, and part to play. During the play time such games as Corner Ball, End Ball, Volley Ball, Punch Ball and Base Ball are played, also some time is given to Folk Dancing. In addition to this work in classes for girls the College and Preparatory Department are each represented by a Basketball Team which plays outside games. Two first-class Tennis courts are also reserved for the use of the girls.

For boys the work is entirely elective and our motto is, "Something for Every Boy and Every Boy into Something." Leagues are formed to play such games as Basketball and Baseball. Every boy in College is assigned to play on one of the teams. Then regular practice hours are given to each team so that every boy has a chance to get in the game. For boys who become decidedly proficient in the playing of the different games we have the College Teams which compete against outside organizations. Our Football, Basketball, Baseball, Track and Tennis teams are a credit to the College.

DEPARTMENT OF PHYSICS.

PROFESSOR KUNSMAN.

The method of instruction in this department is by lectures, recitations and laboratory exercises.

SECONDARY COURSES.

Phys. 1. *Elementary Physics*. Introductory principles of mechanics and heat as outlined in Millikan and Gale's *First Course in Physics*. A list of laboratory experiments, correlated with the text, is completed by each student.

Required of Fourth Year Preparatory students expecting to enter college courses in General Science or Engineering, first semester, 3 hours plus 3 hours laboratory.

Phys. 2. *Elementary Physics*. Continuation of Phys. 1. Electricity, sound and light.

Required of Fourth Year Preparatory students expecting to enter college courses in General Science or Engineering, second semester, 3 hours plus 3 hours laboratory. Prerequisite, Phys. 1.

COLLEGE COURSES.

Phys. 11. *College Physics*. Lectures, recitations and assigned problems in mechanics and heat. This course contains a technical treatment of the subject and is particularly designed to meet the needs of students of engineering. Text, Anderson's *Physics for Technical Students*. Laboratory exercises are selected from Millikan and Jamison's manuals.

Required of Sophomores in General Science and Engineering, elective for others, first semester, 3 hours plus 4 hours laboratory.

Phys. 12. *College Physics*. A continuation of Phys. 11. Light, sound and electricity.

Required of Sophomores in General Science and Engineering, elective for others, 3 hours plus 4 hours laboratory. Prerequisite, Phys. 11.

Phys. 13. *Agricultural Physics*. This course is designed to meet the need of agricultural students. It treats of the simpler machines, of the mechanics of gases in connection with weather phenomena, and of liquids in capillarity and osmosis. The fundamental ideas of force, work and power are developed with reference to the various appliances used on the farm. Text, Black and Davis' *Practical Physics*.

Required of Freshmen in Agriculture, first semester, 2 hours plus 2 hours laboratory.

Phys. 14. *Household Physics*. A course of lectures and demonstrations in which the principles involved in appliances of the household are explained and illustrated. The work in light includes a study of illumination, the use of optical instruments, and a brief treatment of photography. Text, Lynde's *Physics of the Household*.

Required of Freshmen in Household Economics, second semester, 2 hours plus 2 hours laboratory.

DEPARTMENT OF PSYCHOLOGY AND PEDAGOGY.

PROFESSOR VAUGHAN.

Psych. 1. *Elementary Psychology*. In this course will be taught in the simplest possible way the structure of the nervous system and its relation to consciousness; the various types of elements of mental processes, sensation, perception, conception, memory, imagination, judgment, reasoning, feeling and willing. The aim will be thoroughly practical, and the application of the principles of psychology to the art of teaching will be constantly kept in view. Professor Vaughan.

Elective for Preparatory and College students and special students who have not had or are not taking Psych. 11. Should be taken only by those who expect to teach. First semester, 5 hours.

Psych. 11. *General Psychology*. This course will cover the same ground as Psych. 1, but in a more scientific manner suited to the ability of more advanced students and without special reference to the application of psychology to teaching. It is primarily intended for general culture and to enable the student to understand himself and his own mental processes. Professor Vaughan.

Required of Seniors in General Science and Household Economics, first semester, 4 hours.

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PEDAGOGY.

Ped. 2. *Rural Education*. A course in the principles and practice of teaching and school management, with particular reference to the problems of the rural and village schools of New Mexico and the introduction and teaching of agriculture and other industrial subjects. Professor Vaughan.

Required of Seniors in Household Economics, elective for all students who are preparing to teach, second semester, 4 hours.

Catalog of Students

1915-1916.

Seniors.

Brown, Levi Stanley.....	Las Cruces, N. M.
Chaffee, Charles Livingston.....	El Paso, Tex.
Cox, Lester Lyle.....	Hagerman, N. M.
Davis, Nina Elsie.....	Mesilla Park, N. M.
Holt, Edwin Lewis.....	Las Cruces, N. M.
Jackson, Oral Kipling.....	Ft. Stockton, Texas
Kirby, Robert Stearns.....	Mesilla Park, N. M.
Llewellyn, Charles Stanley.....	Las Cruces, N. M.
O'Boyle, Anthony Francis.....	Rice, Ariz.
Phelps, Ruth Virginia.....	State College, N. M.
Pohl, Richard Robert.....	Belen, New Mexico
Powers, Homer Patrick.....	Hope, N. M.
Wagner, Fay Arthur.....	McIntosh, N. M.
Weddell, Laurens Weaver.....	Woodbury, N. J.

Juniors.

Adair, Edward Arthur.....	Las Cruces, N. M.
Blackwell, Milton Sylvester.....	Mogollon, N. M.
Briggs, Leslie Palmer.....	Albuquerque, N. M.
Buens, Richard Henry.....	Mesilla Park, N. M.
Fontanna, Theodore Rodney.....	Powers, Mich.
Fulghum, Mildred Elizabeth.....	Chamberino, N. M.
Goebel, William Randolph.....	Santa Fe, N. M.
Humble, Cleave Weliford.....	Roswell, N. M.
Isaacks, Jesse Albert.....	Las Cruces, N. M.
Jourdan, Arthur Deidrich.....	Evansville, Ind.
Ladd, Shaler.....	Mesilla Park, N. M.
Locke, Lowell Francis.....	Mesilla Park, N. M.
Morris, Floyd Andrew.....	Miliken, Colorado
Quesenberry, Fred William.....	Las Cruces, N. M.
Rea, Casper Conrad.....	Riddle, N. M.
Redd, John Charles.....	Las Cruces, N. M.
Sessoms, Robert Lee.....	Waycross, Ga.
Stablein, John Eckert.....	Las Cruces, N. M.
Stirling, Stuart.....	Dayton, N. M.
Taylor, Lytton Raymond.....	Las Cruces, N. M.
Thomas, Willis.....	Gallup, N. M.
Vickers, Gates Stirling.....	Deming, N. M.
Walton, Eda Lou.....	Silver City, N. M.
Wharton, James Edward.....	State College, N. M.

Sophomores.

Archer, William Andrew	Mesilla Park, N. M.
Bousman, Nugent	Farmington, N. M.
Bowman, Frank Otto	Mesilla Park, N. M.
Brownlee, Blanche	Las Cruces, N. M.
Buvsen, Margaret Smart	Mesilla Park, N. M.
Campbell, Lawrence Clifford	Ft. Davis, Texas
Carroon, William Evan	Clovis, N. M.
Cartwright, Ora Hester	Las Cruces, N. M.
Clarke, Norman William	Las Cruces, N. M.
Coates, Alva	Mesilla Park, N. M.
Cormany, Charles Evans	Las Cruces, N. M.
Edleman, Louis	Yazoo City, Miss.
Garrett, Chester	Portales, N. M.
Heilman, Karl Kenneth	Mesilla Park, N. M.
Hollinger, Ewin Condit	Union City, Ind.
Hulbert, Lureen Walker	Belen, N. M.
Hyland, Ruth Josephine	State College, N. M.
Lane, Anna Belle	Las Cruces, N. M.
Meerscheidt, Hilmar	San Antonio, Tex.
Merrill, Richard Knight	Ft. Davis, Tex.
Quesenberry, Joe	Las Cruces, N. M.
Rentfrow, Martina Bendette	Mesilla Park, N. M.
Sinnoek, William Pike	Mora, N. M.
Woodson, Corinne Lee	Las Cruces, N. M.

Freshmen.

Bennett, Hilary Joseph	Las Cruces, N. M.
Bousman, Tracy	Farmington, N. M.
Bowers, Vernice Norma	Albuquerque, N. M.
Buell, Grace Eleanor	Mesilla Park, N. M.
Carson, Ernest Harry	Hope, N. M.
Foster, Robert Geib	Raton, N. M.
Hale, Hugh Douglas	Hot Springs, Ark.
Herbert, Guy Hammond	Roswell, N. M.
Hyland, Gertrude Elin	State College, N. M.
James, William Harold	Mogollon, N. M.
Kinsell, Dillman Conden	Santa Fe, N. M.
Kronig, Louis Hurd	Watrous, N. M.
Ledford, Bessie James	Mesilla Park, N. M.
Livesay, Louisiana Johnson	Anthony, N. M.
Marmon, Kenneth Analla	Laguna, N. M.
Marrin, Celia Theresa	El Paso, Texas
McClernon, Kenneth	Las Cruces, N. M.
Ousterhout, Lawrence Sherburne	Hondale, N. M.
Ray, Clyde	Ft. Sumter, N. M.
Rea, Joyce Kitty	Riddle, N. M.
Rentfrow, Era Hall	Mesilla Park, N. M.
Rentfrow, Doyle	Mesilla Park, N. M.
Rooney, Vernon Lonnie	Ft. Stockton, Texas
Scarborough, Mary Henrietta	Las Cruces, N. M.
Smith, Nellie Chadbourne	Santa Rosa, N. M.

Smith, Howell Allie.....	State College, N. M.
Smith, Mabel Jensen.....	Orogrande, N. M.
Smith, Harry.....	Big Springs, Texas
Stablein, Lawrence Raymond.....	Las Cruces, N. M.
Stewart, Alice Eva.....	Mesilla Park, N. M.
Tuttle, William Benjamin.....	El Paso, Texas

Stenographers.

Brownlee, Nelle Alice.....	Las Cruces, N. M.
Coman, Thelma Eleanor.....	Mesilla Park, N. M.
Hyland, Grace Rosenna.....	State College, N. M.

Specials.

Akin, Ruth.....	Yeso, N. M.
Baca, Alfonso.....	Santa Fe, N. M.
Brooks, Ruth.....	El Paso, Texas
Deloughry, John.....	State College, N. M.
Hiler, Ben Slaughter.....	Chloride, N. M.
Parker, Bjorkman.....	Hachita, N. M.
Peel, Albert Gifford.....	Pueblo, Colo.
Phelps, Lela Ford.....	Las Cruces, N. M.
Proctor, John Bacil.....	Mills, N. M.
Scoggins, Leota.....	Mesilla Park, N. M.
Semour, Wilfred Louis.....	Evansville, Ind.
Thaxton, Robert Clifton.....	Mesilla Park, N. M.
Wheelon, Albert Gifford.....	Santa Fe, N. M.

Fourth Preparatory.

Clark, Grace.....	Las Cruces, N. M.
Cox, Laleah Margaret.....	Hagerman, N. M.
Foster, Walter James.....	Deming, N. M.
Goebel, Dorothy.....	Santa Fe, N. M.
Goodenough, Charles Lee.....	Lincoln, Cal.
Guillett, Lucille Anna.....	Cortez, Colo.
Hagerty, Mary Elizabeth.....	State College, N. M.
Hill, Walter Bacon.....	Mesilla Park, N. M.
Linss, Edward.....	El Paso, Texas
Livesay, Ruth.....	Anthony, N. M.
Mactavish, Ian Duncan.....	Magalena, N. M.
Miller, Hugh Stright.....	Jemez Springs, N. M.
Nichols, Alva.....	Tularosa, N. M.
Orme, Bernice.....	Mountainair, N. M.
Phelps, Elsa Frances.....	State College, N. M.
Quesenberry, Florence Bradus.....	Las Cruces, N. M.
Robbins, John Cyril.....	Mesilla Park, N. M.
Scoggins, Gertrude Ida.....	Mesilla Park, N. M.
Scott, Harold Charles.....	Mesilla Park, N. M.
Wharton, Dorothy Mae.....	Douglas, Ariz.
Worcester, Richard Leonard.....	Chihuahua, Mexico

Third Preparatory.

Beall, Fred Lewis.....	Vermijo Park, N. M.
Bowman, Harold.....	Dona Ana, N. M.
Buell, Arthur Warren.....	Mesilla Park, N. M.
Conway, Harry Ramsey.....	Mesilla Park, N. M.
Costa, Frank Paul.....	Madrid, N. M.
Hardy, Earl Leroy.....	Santa Fe, N. M.
Hare, Clifford Nelson.....	State College, N. M.
Hines, Gladys Marie.....	Mesilla, N. M.
Knight, Marie Elizabeth.....	Mesilla Park, N. M.
Ladd, John Gardner.....	Mesilla Park, N. M.
Macgregor, Morris.....	Vermijo Park, N. M.
McDowell, Isal Marie.....	Mesilla Park, N. M.
Ricketson, Nona Vilanty.....	Mesilla Park, N. M.

Second Preparatory.

Arnett, George.....	Metcalf, Ariz.
Beaubien, Dean Ella.....	Carthage, N. M.
Beaubien, Kenneth Gale.....	Carthage, N. M.
Blazer, Noel Edison.....	Mescalero, N. M.
Brooks, Willis Merette.....	Las Cruces, N. M.
Brooks, Albert Sydney.....	Las Cruces, N. M.
Cleavenger, Dorothy.....	Chihuahua, Mexico
Dinwiddie, Helen.....	El Paso, Tex.
Doss, Judson Evan.....	Artesia, N. M.
Ellis, Paul Munson.....	State College, N. M.
Evans, Neil.....	Mesilla Park, N. M.
Fantacci, Carlo.....	Roswell, N. M.
Grizzle, Wiley.....	Buchanan, N. M.
Hagerty, Francis Edward.....	State College, N. M.
Hannum, Norris Hamilton.....	Telles, N. M.
Harris, Hawes Coulbern.....	El Paso, Texas
Hauser, Mabel Claire.....	State College, N. M.
Hill, Dean Frederick.....	Mesilla Park, N. M.
Hyland, Harlow Herbert.....	State College, N. M.
Jackson, Granville.....	Jackson, N. M.
Ledford, William Dewey.....	Mesilla Park, N. M.
Oberholser, Edna.....	Hurley, N. M.
Osmer, Clarence Alfred.....	Santa Rita, N. M.
Powers, Charles Aloysius.....	Santa Rita, N. M.
Richards, Claude Earl.....	Mesilla Park, N. M.
Robbins, Dorothy.....	Mesilla Park, N. M.
Sebring, Annabel Laura.....	Anthony, N. M.
Stoes, Phillip Edward.....	Las Cruces, N. M.
Taylor, Mae Ellen.....	Lake Valley, N. M.
Temple, Leon Alfred.....	Elephant Butte, N. M.
Temple, Lorán Albin.....	Elephant Butte, N. M.
Walker, Morrow.....	Mesilla Park, N. M.
Weir, Celia Caroline.....	Mesilla Park, N. M.
Williams, Esther May.....	Garfield, N. M.

First Preparatory.

Adams, Justus Calvin.....	Anthony, N. M.
Alexander, Silas.....	El Paso, Texas
Armijo, Hermenes.....	Socorro, N. M.
Berkshire, Milton Charles.....	Estancia, N. M.
Booth, Earl Leicham.....	El Paso, Texas
Brown, Roy Brown.....	Mesilla Park, N. M.
Burrus, Ray Richard.....	Estancia, N. M.
Chaves, Francisco.....	Magdalena, N. M.
Coates, Eldridge September.....	Mogollon, N. M.
Cowan, Lawrence Lapoint.....	Las Cruces, N. M.
Cowell, Richard Chester.....	Elephant Butte, N. M.
Davis, Homer.....	El Paso, Texas
Fountain, Henry.....	Mesilla, N. M.
Gilbert, Henry George.....	Hope, N. M.
Gonzales, Juan.....	Mesilla Park, N. M.
Gregory, Walter Dewey.....	Grandview, N. M.
Hawk, Hugh Mitchell.....	Anthony, N. M.
Hecq, LeRoy.....	Raton, N. M.
Hines, Frederick Philip.....	Mesilla, N. M.
Hutchings, George W.....	Albuquerque, N. M.
Kilgore, James Thomas.....	Berino, N. M.
Kirkpatrick, Wilson Martin.....	Las Palomas, N. M.
Ladd, Dorothy Devereaux.....	Mesilla Park, N. M.
Laurens, Salvador Prieto.....	El Paso, Texas
Mossman, Francis.....	Rincon, N. M.
Plummer, Hermogene.....	San Antonio, Texas
Ramirez, Juana Marta.....	Las Cruces, N. M.
Randall, Martin.....	Lordsburg, N. M.
Reagan, Robert Earl.....	La Mesa, N. M.
Reilman, Elodia Dolores.....	Tularosa, N. M.
Sanchez, Herman.....	Belen, N. M.
Smith, Fred Ross.....	Tucumcari, N. M.
Tinoco, Ignacio.....	El Paso, Texas
Townley, Lawrence Banett.....	El Paso, Texas
Van Noy, Luis Stanfert.....	El Paso, Texas
Ward, James.....	Reserve, N. M.
Webster, Joe.....	Ft. Davis, Texas
White, Virgia Alice.....	Las Cruces, N. M.
Worcester, Barbara.....	Chihuahua, Mexico

One Year Trades Course.

Almanzas, Santos.....	Mesilla, N. M.
Almanzas, Manuel.....	Mesilla, N. M.
Carbajal, Henry.....	Hurley, N. M.
Carrall, Francisco.....	Chihuahua, Mexico
Coe, Harvey Marion.....	Mesilla Park, N. M.
Cowan, Lawrence Lapoint.....	Las Cruces, N. M.
Ervin, Merle Waldemar.....	Las Cruces, N. M.
Gatlin, John.....	Las Cruces, N. M.
Lane, Cleland Dale.....	Las Cruces, N. M.

Limon, Placido.....	Mesilla, N. M.
Lucero, Jose Miguel.....	Mesilla, N. M.
Lucero, Jose Barbaro.....	Las Cruces, N. M.
Martinez, Emilio.....	Chihuahua, Mexico
Medina, Jose.....	Mesilla, N. M.
Navarette, Frank.....	Mesilla, N. M.
Olivas, Leonel.....	Bachiniva, Mexico
Omari, Abraham.....	State College, N. M.
Pinon, Francisco.....	Chihuahua, Mexico
Ramirez, Julio.....	El Paso, Texas
Ramirez, Alfredo.....	El Paso, Texas
Rivero, Eustacio.....	Chihuahua, Mexico
Saucedo, Alfonso.....	Chihuahua, Mexico
Taylor, Clinton.....	Lake Valley, N. M.
Varez, Florentino.....	Chihuahua, Mexico
Vasquez, Enrique.....	Casa Piedre, Texas
Urvina, Ramon.....	Chihuahua, Mexico

Music—Piano.

Ruth Akin	Mary Hagerty
Dorothy Barnes	Dorothy Ladd
Dean Beaubien	Ruth Livesay
Ruth Brooks	Maggie Longbottom
Laleah Cox	May Ricketson
Helen Dinwiddie	Marie Snow
Robert Foster	Annabelle Sebring
Francis Hagerty	May Taylor

Orchestra.

LeRoy Hecq	Dale Lane
Henry Fountain	Robert Sessoms
Era Rentfrow	Noel Blazer
Thelma Coman	Paul Ellis

Honor Roll.

Students receiving grade of at least 90 in four or more subjects throughout the college year of 1915-16.

Vernice Bowers	Dillman Kinsell
Rodney Fontanna	Alva Nichols
Robert Foster	Mary Scarborough
Walter Hill	Gates Vickers
Lureen Hulbert	Barbara Worcester

Recapitulation.

Seniors	14
Juniors	24
Sophomores	24
Freshmen	31
Stenographers	3
Specials	13
Fourth Preparatory	21
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Second Preparatory	34
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One Year Trades Course.....	26
Music	23
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	264
Less names counted twice.....	21
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Alumni

Officers of Alumni Association.

President.....	Mrs. W. A. Sutherland, '01
First Vice-President.....	Fabian Garcia, '94
Second Vice-President.....	Fabian Garcia, '94
Secretary.....	Burton Fite, '15
Treasurer.....	Oscar C. Snow, '94

Class of 1894.

- Fabian Garcia, B. S., M. S. A., State College, N. M., Director of Experiment Station and Professor of Horticulture, New Mexico College of Agriculture and Mechanic Arts.
Agnes Williams, B. S., (Mrs. Herbert), Roswell, N. M., Housewife.
R. Roy Larkin, B. S., East Las Vegas, N. M., Southwestern Agent of Ginn and Co., Member Board of Regents, New Mexico College of Agriculture and Mechanic Arts.
Lemuel C. McGrath, B. S., Deceased, 1906.
Oscar C. Snow, B. S., Mesilla Park, N. M., Ranchman, and President First National Bank of Las Cruces, N. M.

Class of 1895.

- Jessie Casad, B. S., (Mrs. C. E. Rhodes), Apartado 30, El Oro, Estado de Mexico, Mexico, Housewife.

Class of 1896.

- Mae Gilmore, B. S., (Mrs. Paul Mayer), White Oaks, N. M., Housewife.
Alfred M. Holt, M. S., Deceased, 1901.
Albert H. Peterson, B. S., 638 East 95th St., Chicago, Ill., Mechanic.
Clarence E. Rhodes, B. S., Apartado 30, El Oro, Estado de Mexico, Mexico, Superintendent Cyanide Department, El Oro Mines.

Class of 1897.

- Joseph F. Bennett, M. S., La Union, N. M., Ranchman.
Elgin B. Holt, B. S., Magdalena, Sonora, Mexico, Mining Engineer, Member firm, Holt Brothers.
Arthur F. Williams, B. S., Deceased, 1905.

Class of 1898.

- Edwin E. Casey, B. S., U. S. V., Deceased, 1898.
Duval G. Cravens, B. S., U. S. V., Sewanee, Tenn., Headmaster Sewanee Military Academy.
Charles E. Mead, B. S., Colton, Cal., Druggist, Mission Drug Store.
Ivah R. Mead, B. S., (Mrs. Shallenberger), Larned, Kan., Housewife.
Isaac H. Stanley, B. S., Santa Rita, N. M., with Chino Copper Co.
William A. Sutherland, B. S., Las Cruces, N. M., Member law firm of Holt and Sutherland.
Lottie Sweet, B. S., 847 North Broadway, Santa Ana, Cal., School Principal.
George M. Williams, B. S., Las Cruces, N. M., Farming.

Class of 1899.

- Edward J. Coe, Venice, Calif., Draughtsman.
Walter E. Holt, B. S., Magdalena, Sonora, Mexico, Mining Engineer,
Member firm, Holt Brothers.
John D. Tinsley, B. S., Brownwood, Texas, Agricultural Demonstrator
for Gulf, Colorado and Santa Fe Railroad Co.

Class of 1900.

- William Cory Meeker, B. S., Topeka, Kan., Pastor Second Presbyterian
Church.
Charles Lewis Post, M. S., Las Cruces, N. M., Surveyor for Dona Ana
County, and U. S. Deputy Mineral Surveyor.
Archibald Bruce Sage, B. S., M. S., 1911, Dallas, Texas, City Super-
visor Manual Training.
Halbert E. P. Thomas, B. S., Deceased.

Class of 1901.

- Leah Nora Newberry, B. S., (Mrs. C. D. Case), 1033 N. Springfield
Ave., Chicago, Ill., Housewife.
Minnie Wilson Newberry, B. S., (Mrs. W. A. Sutherland), Las Cruces,
N. M., Housewife.
Matthew Steele, M. S., (Ph. D. Columbia), Columbia, Mo., Assistant
Professor Biological Chemistry, University of Missouri.
M. A. Sanchez, M. S. A., Deceased 1909.

Class of 1902.

- Theron Catlin Bennett, B. S., 811 16th St., Denver, Colo., The Theron
C. Bennett Co., Music Publishers.
Elizabeth Coleman, B. S., (Mrs. Koger), 522 Madison St., Monterey,
Calif., Supervisor Household Economics, Monterey Schools.
Elizabeth C. Foster, B. S., Las Cruces, N. M., Teaching.
Frances French, B. S., Las Cruces, N. M., Principal Las Cruces High
School.
James Stanislaus Macgregor, M. S., Columbia University, New York,
N. Y., Consulting Engineer on Tests of Materials and Instructor
in Civil Engineering Department, Columbia University.

Class of 1903.

- Fannie Ford, B. S., Whittier, Calif., Teacher in City Schools.
Maud Elizabeth McFie, B. S., (Mrs. L. B. Bloom), Jemez, N. M.,
Housewife.
Orrick B. Metcalf, B. S., Assistant in Practical Mechanics, New Mexico
College of Agriculture and Mechanic Arts.
Ina M. Nelson, B. S., (Mrs. J. H. Wiese), 5623 Forty-second Ave.,
Seattle, Wash., Housewife.

Class of 1904.

- Clarence D. Case, B. S. A., 1033 N. Springfield Ave., Chicago, Ill.,
Journalist.
Lauren W. Case, B. S., Chicago, Ill., Accountant.

- Lute Foster, B. S., (Mrs. D. C. Kissam), 1509 W. 52nd St., Chicago, Ill., Housewife.
 Orpha Bennett Hoblit, B. S., (Mrs. M. L. Hoblit), Coronado, Calif., Housewife.
 Pearl C. Miller, B. S., (B. S. Drexel Institute, 1906), State College, N. M., Professor of Household Economics, New Mexico College of Agriculture and Mechanic Arts.
 Rowena Mott, B. S., (Mrs. Oscar L. Poe), Anthony, N. M., Housewife.

Class of 1905.

- Thomas B. Green, B. S. A., Deceased, 1905.
 Annetta May Harney, B. S., (Mrs. O. W. H. Bowers), National City, Calif., Housewife.
 Reginald H. Hart, B. S., Medford, Oregon, Farmer.
 Benjamin F. Nabours, B. S. in M. E., Holloway, N. M., Forest Service, U. S. D. A.
 Rafael Ramirez, B. S. in Ag., Deceased, 1907.
 Harry H. Schutz, B. S., (B. S. A. Cornell, 1907), Los Lunas, N. M., Manager, The Southwestern Agricultural Corporation.

Class of 1906.

- Joseph F. Blinn, B. S., 1028 Church St., Ann Harbor, Mich.
 Merle Anna Blinn, B. S., (Mrs. U. G. Brown), 20 Parsons St., San Francisco, Calif., Housewife.
 John William Boutz, B. S. in Ag., Harris, Sask., Canada, Farming.
 Archie A. Brown, B. S. in M. E., Engineer, San Francisco, Calif.
 Ulysses G. Brown, B. S. in M. E., 20 Parsons St., San Francisco, Calif., Engineering Draughtsman, City Engineer's office.
 Jose A. Bruno, B. S. in M. E., Guaymas, Puerto Rico, Planter.
 Ruth Coleman, B. S., (Mrs. C. D. Miller), Tularosa, N. M., Housewife.
 Guy C. Given, B. S., (Ph. D., Gottingen), State College, Penn., Assistant in Agricultural Chemistry.
 Earl Addison Graham, B. S. in M. E., 71 Broadway, New York, Assistant Engineer Electric Bond and Share Co.
 Charles DeWitt Miller, B. S., Tularosa, N. M., Resident Manager Velle Farms Company (48,000 acres).
 Bertha Peet, B. S., Williams, Arizona, Teacher of Music.

Class of 1907.

- Vicente Davila, B. S. in M. E., San Luis Potosi, Mexico, Governor of the State of San Luis Potosi.
 Ralph B. Deemer, B. S., Lafayette, Ind., Deputy State Chemist, Purdue University.
 Allen G. Graham, M. S. A., El Paso County Agriculturist, El Paso, Tex.
 John George Miller, M. E., 227 Linden Ave., Long Beach, Calif., Director of Manual Training, Long Beach Polytechnic High School.
 Jose Quintero, B. S. in M. E., State College, N. M., Assistant in Chemistry.
 Paul C. Standley, M. S., Washington, D. C., Assistant Curator, Herbarium, U. S. National Museum.

Class of 1908.

- Dean W. Bloodgood, B. S. in M. E., State College, N. M., Assistant Irrigation Engineer, New Mexico College of Agriculture and Mechanic Arts.
- J. Maughs Brown, B. S. in C. E., Professor Civil Engineering, State University, Vermillion, S. Dak.
- Phillip Dessauer, B. S. in M. E., Las Cruces, N. M., Captain New Mexico National Guard.
- William Endicott, B. S. in M. E., Schenectady, N. Y., General Electric Company.
- William W. Gallagher, B. S. in M. E., White Oaks, N. M., Stockman.
- George G. Helde, B. S. in M. E., Y. M. C. A., Springfield, Mo., Secretary Young Men's Christian Association.
- Claude P. Henry, B. S., Yazoo City, Miss., Teaching.
- H. Cornelius Henry, B. S., Deceased, 1911.
- Earl C. Hornbrook, B. S. in M. E., Elm Grove, W. Va., Manager Shipping Department, Trimble and Lutz Co.
- Jesse E. Mundell, B. S. in Ag., Big Springs, Texas, Manager U. S. Dry Farming Experiment Station.
- William Pattison, B. S. in M. E., Howard, Mont., Farming.
- James Poe, B. S. in Ag., Mesilla Park, N. M., Ranchman.
- Wilbur L. Powers, B. S. in Ag., Corvallis, Oregon, Assistant in Drainage and Irrigation, Oregon Agricultural College.
- Fernando Quintero, B. S., San Juan Bautista Basco, Mex., Farmer.
- James A. Steel, B. S., 106 West 143rd St., New York City, Student in Medicine, College of Physicians and Surgeons, Columbia University.
- Jay B. Stoneking, M. S. in M. E., Wilmington, Del., Agriculturist for the DuPont Powder Co.
- Maggie May Stover, B. S., (Mrs. Reading), Bisbee, Ariz., Housewife.
- Jacob A. Sweet, B. S. in C. E., Descubridora, Durango, Mexico, Manager Hacienda Pelayo.
- Justin R. Weddell, B. S., 1900 Euclid Ave., Cleveland, Ohio, President and General Manager Weddell-Schmidt Advertising Co.
- C. P. Wilson, M. S., Mesilla Park, N. M., Extension Secretary and Editor of Agricultural Publications, New Mexico College of Agriculture and Mechanic Arts.

Class of 1909.

- Herbert N. Alleman, B. S. in M. E., Willowbrook, Calif., Business.
- A. P. Bjerregaard, B. S., 10724 Kimberley Ave., Cleveland, Ohio, Chemist, Canfield Oil Co.
- Lois M. Friend, B. S., Denver, Colo.
- Victor C. Kays, B. S. in Ag., M. S. in Ag., Jonesboro, Ark., Principal State Agricultural School, First District.
- S. R. Mitchell, (B. S. Purdue University), M. S., Redondo, Calif., Science Teacher in City Schools.
- J. Leroy Pritchard, B. S., San Francisco, Calif., University of California Hospital.

Class of 1910.

- Herbert Clyde Stewart, B. S. in Ag., Pecos City, Texas, Farmer.
 Armando Uranga, B. S. in Ag., San Juan Bautista, Tabasco, Mexico.
 Chemist, Estacion Agricola Experimental.
 Walter Ames, B. S. in M. E., Engineer, Gomez Palacio, Mexico.
 Stuart Knight Baker, B. S. in E. E., Office of Chief Engineer Central
 Union Telephone Co., 212 West Washington St., Chicago, Ill.
 Howard C. Boone, B. S. in M. E., Electrical Engineer, Los Angeles,
 Calif.
 Arner G. Eede, B. S., Ballston Spa, N. Y., Business.
 Arthur Fraker, B. S. in C. E., El Paso, Texas, Surveyor.
 Gordon Goebel, B. S. in E. E., East Pittsburgh, Penn., with Westing-
 house Electric Co., Service Dept.
 Ruth E. Oliver, B. S., at Home, Ballard, Washington.
 Edward L. Redding, B. S. in C. E., Santa Rita, N. M., with Chino
 Copper Co.
 Donald W. Young, B. S., Attorney at Law, Las Cruces, N. M.

Class of 1911.

- William E. Campbell, B. S., 124 W. Second St., Los Angeles, Calif.,
 Cutlery Business.
 Percy C. Fitzgerald, B. S. in Ag., Sligo, Texas, Farming.
 Elsie Raye Hines, B. S., (Mrs. J. W. Rigney), Roswell, N. M., House-
 wife.
 Bertha A. Mayer, B. S., (Mrs. E. V. Wallace), White Oaks, N. M.,
 Housewife.
 Paul W. Mayer, B. S., White Oaks, N. M., Farming.
 Henry C. McCowen, B. S. in Ag., Chicago, Ill., Assistant Colonization
 Agent, Santa Fe Railroad.
 Sewall Egbert Merrill, B. S. in Ag., Inglewood, Cal., Teacher of Agri-
 culture.
 John E. Powers, B. S. in C. E., Santa Fe, N. M., Hydrographer, State
 Engineer's Office.
 George R. Quesenberry, B. S. in Ag., Plainview, Texas, Farmer.
 Joseph W. Rigney, B. S. in Ag., Roswell, N. M., Chaves County Agri-
 culturist.
 Rupert L. Stewart, B. S. in Ag., (M. S. A. Cornell 1914), Professor of
 Agronomy, New Mexico College of Agriculture and Mechanic Arts.
 J. A. Anderson, B. S. C., Pasadena, Calif., Teacher in City Schools.
 John K. Haggart, B. S. in C. E., Y. M. C. A., Wichita, Kans., Civil
 Engineer Wichita Union Terminal.
 H. Leslie Hermann, B. S. in M. E., Ray, Arizona, Mining.
 Arthur Laferriere, B. S. in Ag., Assistant in Nutrition Laboratory,
 New Mexico College of Agriculture and Mechanic Arts.
 James Richard Quesenberry, B. S. in Ag., Graduate Student Iowa
 Agricultural College, Ames, Iowa.
 K. O. Windsor, B. S., Santa Fe, N. M., Contractor and Builder.
 Ruth Thompson, B. S. in H. E., (Mrs. Rex E. Willard), Brownsville,
 Texas, Housewife.

Class of 1913.

- Samuel I. Bousman, B. S. in C. S., Hurley, N. M., Engineer with Chino Copper Company.
Ruth I. Brainard, B. S. in H. E., (Mrs. J. W. Knorr), Carlsbad, N. M., Housewife.
Charles C. Briggs, B. S., Fowler, Kansas, Clothing Business.
Cassius L. Clay, B. S., 431 Royal St., New Orleans, Louisiana, State Chemist for Louisiana.
Moises R. Diaz, B. S. in Ag., Ranchman, Saltillo, Coahuila, Mexico.
Ada L. Hoagland, B. S. in H. E., Las Cruces, N. M., Business.
J. William Knorr, B. S. in Ag., Eddy County Agriculturist, Carlsbad, N. M.
Carrie Padon Phelps, B. S. in H. E., Postmistress, State College, N. M.
Herbert G. Smith, B. S. in Ag., Tucumcari, N. M., Assistant in Dry Land Agriculture, United States Department of Agriculture.
Leonard G. Thomas, B. S. in C. E., State Engineer's Office, Sacramento, Calif.
Earl J. Wilson, B. S. in Ag., Acting Steward, N. M. I. A. Hospital, East Las Vegas, N. M.

Class of 1914.

- Paul Brownlee, B. S., Principal of High School, Filer, Idaho.
Robert Lee Clayton, B. S., Principal Forest Grove High School, Forest Grove, Oregon.
Earl Walker Geyer, B. S. in Ag., Assistant Entomologist, U. S. D. A., Roswell, N. M.
Paul Joseph Given, B. S., Bank Employee, Hillsboro, N. M.
Robert Edgar Morris, B. S. in E. E., The Mountain States Telephone and Telegraph Company, Albuquerque, N. M.
Kenneth Bushnell Ogilvie, B. S. in E. E., with Woodhead and Welmot, Electrical Contractors, Roswell, N. M.
Sadie May Stuart, B. S. in H. E., Teacher of Domestic Science in Public Schools, Deming, N. M.

Class of 1915.

- Leon John Cochrane, M. S., 5th Floor, 124 E. 28th St., New York City, Secretary to John R. Mott.
Norfleet Giddings Bone, B. S. in C. E., Douglas, Ariz., Assistant to City Engineer.
Kenneth Cone Brewster, B. S., Assistant Biology Department, New Mexico College of Agriculture and Mechanic Arts.
Joel Wallace Elliott, B. S. in Ag., El Paso, Texas.
Walter Montgomery Ellison, B. S. in Ag., Deming, N. M., Teaching.
Arra Burton Fite, B. S. in Ag., Assistant in Horticulture, New Mexico College of Agriculture and Mechanic Arts.
Raymond Frank Frenger, B. S. in M. E., East Pittsburgh, Pa., with Westinghouse Electric Company.
Carmen Gilliam, B. S. in H. E., Capitan, N. M., Teaching.

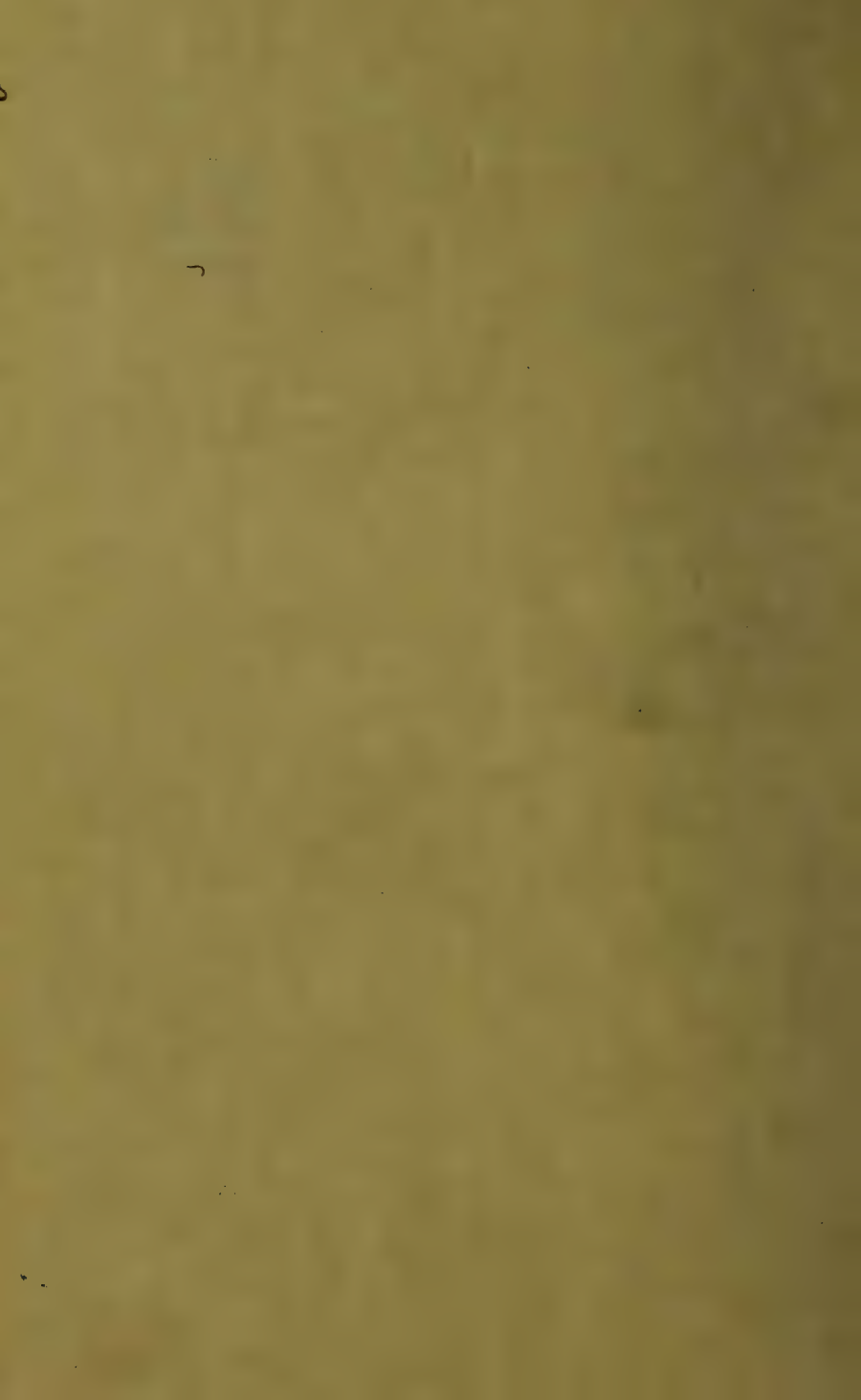
- James Guy Hamilton, B. S. in Ag., Assistant in Agronomy, New Mexico College of Agriculture and Mechanic Arts.
- Russell John Hank, B. S. in C. E., with U. S. R. S., Civil Engineer, P. O. Box 1097, Austin, Texas.
- Felicitas Kaune, B. S. in H. E., Santa Fe, N. M., at Home.
- Uil Lane, B. S., Las Cruces, N. M., Teaching.
- Edward Jackson Maynard, B. S. in Ag., Assistant in Animal Husbandry, New Mexico College of Agriculture and Mechanic Arts.
- Maurice Mortimer Mitchell, B. S. in C. E., Tyrone, N. M., with Burro Mountain Copper Mining Company, Mining Engineer.
- John Edward Quinlan, B. S. in C. E., Hurley, N. M., with Chino Copper Co., Draughtsman.
- Eleanor Thaxton, B. S., Austin, Texas, Graduate Student, University of Texas.
- Jesse Hugh Thomasson, B. S. in Ag., Downs, Kansas, Teaching.
- Laurens Weaver Weddell, B. S., El Paso, Texas, with Tuttle Paint and Glass Co.

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COLLEGE
OF
AGRICULTURE
AND
MECHANIC
ARTS

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1917-18

COLLEGE RECORD

Volume 10

MAY 1917

Number 4

TWENTY-SEVENTH

ANNUAL CATALOG

New Mexico College
of Agriculture and
Mechanic Arts

STATE COLLEGE, NEW MEXICO

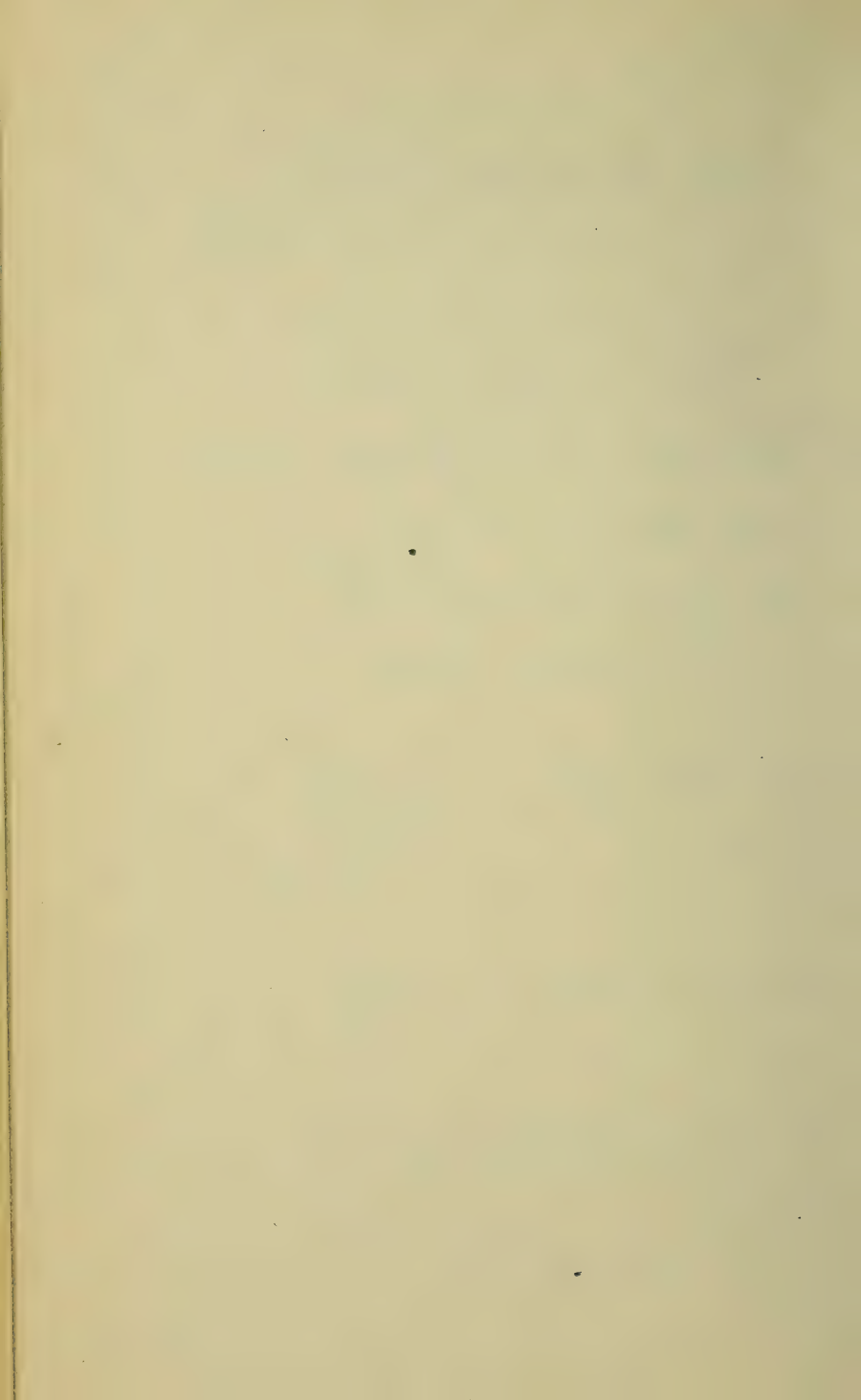
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1916-1917

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1917-1918

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Las Cruces, N. M.
1917



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CALENDAR

1917

July							August							September						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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8	9	10	11	12	13	14	5	6	7	8	9	10	11	2	3	4	5	6	7	8
15	16	17	18	19	20	21	12	13	14	15	16	17	18	9	10	11	12	13	14	15
22	23	24	25	26	27	28	19	20	21	22	23	24	25	16	17	18	19	20	21	22
29	30	31	--	--	--	--	26	27	28	29	30	31	--	23	24	25	26	27	28	29
														30	--	--	--	--	--	--

October							November							December						
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7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8
14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15
21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22
28	29	30	31	--	--	--	25	26	27	28	29	30	--	23	24	25	26	27	28	29
														30	31	--	--	--	--	--

1918

January							February							March						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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6	7	8	9	10	11	12	3	4	5	6	7	8	9	3	4	5	6	7	8	9
13	14	15	16	17	18	19	10	11	12	13	14	15	16	10	11	12	13	14	15	16
20	21	22	23	24	25	26	17	18	19	20	21	22	23	17	18	19	20	21	22	23
27	28	29	30	31	--	--	24	25	26	27	28	--	--	24	25	26	27	28	29	30
														31	--	--	--	--	--	--

April							May							June						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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7	8	9	10	11	12	13	5	6	7	8	9	10	11	2	3	4	5	6	7	8
14	15	16	17	18	19	20	12	13	14	15	16	17	18	9	10	11	12	13	14	15
21	22	23	24	25	26	27	19	20	21	22	23	24	25	16	17	18	19	20	21	22
28	29	30	--	--	--	--	26	27	28	29	30	31	--	23	24	25	26	27	28	29
														30	--	--	--	--	--	--

COLLEGE CALENDAR

1917-1918

- August 29, Wednesday, First Semester begins.
Faculty Meeting, 10 A. M.
Registration begins, 1 P. M.
- August 30, Thursday, Registration, from 9 A. M. to 4 P. M.
Special and Entrance Examinations.
- August 31, Friday, Class Work begins, 8:15 A. M.
- October 29, 30, Monday and Tuesday, Quarterly Examinations for Preparatory Department.
- November 29, Thursday, Thanksgiving Day.
- December 22-January 6, Christmas Vacation.
- January 7, Monday, Regular Class Work resumed.
Six Weeks' Winter Course in Agriculture and Mechanic Arts begins.
- January 7-12, Monday-Saturday, Farmers' Week.
- January 14-16, Monday, Tuesday and Wednesday, Semester Examinations.
- January 17, Thursday, Second Semester begins.
Registration, from 9 A. M. to 4 P. M.
- January 18, Friday, Class Work begins, 8:15 A. M.
- March 18, 19, Monday and Tuesday, Quarterly Examinations for Preparatory Department.
- May 17-21, Friday, Monday and Tuesday, Semester Examinations.
- May 19, Sunday, Baccalaureate Sermon, 11 A. M.
- May 21, Tuesday, Closing Exercises of Preparatory Department, 8 P. M.
- May 22, Wednesday, Senior Class-Day Exercises, 10 A. M.
Alumni Banquet, 8 P. M.
- May 23, Thursday, Commencement Exercises, 10 A. M.
Alumni Business Meeting, 2 P. M.

FACULTY

*GEORGE EDGAR LADD, Ph. D., President and Professor of
Geology.

A. B., Harvard University, 1887; A. M., *ibid.*, 1888; Ph. D. *ibid.*, 1894; student University of Munich, 1894-1895; Assistant in Geology, Harvard, 1892-1894; Instructor in Geology, *ibid.*, five summers; U. S. Geological Survey two years; President Missouri School of Mines, 1897-1907; President Oklahoma School of Mines, 1908-1913; President and Professor of Geology, New Mexico College of A. and M. A., 1913—

CLARENCE TURPIE HAGERTY, M. S., Professor of Mathematics
and Astronomy.

B. S., Notre Dame University, 1890; M. S., *ibid.*, 1895; Graduate student, Harvard University, summer, 1891; Professor of Mathematics and Astronomy, New Mexico College of A. and M. A., 1891—

LUTHER FOSTER, M. S. A., Professor of Animal Husbandry.

B. S., Iowa State College, 1872; M. S. A., *ibid.*, 1886; Superintendent of Schools, Monticello, Ia., 1873-1883; Superintendent of Schools, Jones County, Ia., 1883-1885; Professor of Agriculture, South Dakota Agricultural College, 1885-1893; Director of South Dakota Experiment Station, 1890-1893; Professor of Agriculture and Botany, Montana State College, 1893-1896; Director of Experiment Station and Professor of Agriculture, Utah Agricultural College, 1896-1900; Professor of Agriculture and Horticulture, Wyoming State University, 1900-1901; President New Mexico College of A. and M. A. and Director of Experiment Station, 1901-1908; Director of Experiment Station and Dean of Agriculture, 1908-1913; Professor of Agriculture, 1913-1914; Professor of Animal Husbandry, 1914—

FABIAN GARCIA, M. S., Director of the Experiment Station
and Professor of Horticulture.

B. S., New Mexico College of A. and M. A. 1894; M. S., *ibid.*, 1905; Graduate student, Cornell University, 1899-1900; Assistant and Assistant Professor of Agriculture and Horticulture, New Mexico College of A. and M. A., 1894-1904; Professor of Horticulture, 1904; Director of Experiment Station, 1913—

MERRITT LORRAINE HOBLIT, A. B., Professor of Latin and
Modern Languages.

A. B., Kalamazoo College, and University of Chicago, 1901; Instructor in French and Spanish, Drake University, 1899-1900; Instructor in French and Spanish, Kalamazoo College, 1900-1901; Instructor in Romance Languages, Drake University, (on leave from N. M. A. C.), 1906-1907; Professor of Latin and Modern Languages, New Mexico College of A. and M. A., 1902—

*Resigned.

JOHN HENRY VAUGHAN, A. M., Professor of History and Political Science.

A. B., University of North Carolina, 1904; A. M., *ibid.*, 1905; Principal of Roswell High School, 1906-1907; Graduate student, Summer School of the South, 1907; Professor of History and English, New Mexico Normal University, 1907-1909; Professor of History and Political Science, New Mexico College of A. and M. A., 1909—

PEARL CHERRY MILLER, B. S., Professor of Household Economics.

B. S., New Mexico College of A. and M. A., 1904; B. S., Drexel Institute, 1906; Instructor in Domestic Science, Sherman Institute, Riverside, Cal., 1907-1910; Professor of Household Economics, New Mexico College of A. and M. A., 1910—

MARY FRANCES WINNINGHAM, A. B., Dean of Women and Instructor in Mathematics and History.

A. B., Arcadia College, Student Cape Girardeau, Mo., Normal School; Principal of High School, West Plains, Mo., 1900-1910; Superintendent of Schools, West Plains, 1910-1911; Dean of Women and Instructor in Mathematics and Latin, New Mexico College of A. and M. A., 1911-1915; Dean of Women and Instructor in Mathematics and History, 1915—

ARTHUR FRANKLIN BARNES, B. S., Dean of Engineering and Professor Mechanical Engineering.

B. S. in M. E., Worcester Polytechnic Institute, 1908; Instructor in Mechanical Engineering, University of Pennsylvania, 1908-1913; Efficiency Engineer, Reed & Prince Mfg. Co., 1908 and 1910; Three summers with City of Worcester; Professor of Engineering, Middlebury College, 1913-1914; Dean of Engineering and Professor of Mechanical Engineering, New Mexico College of A. and M. A., 1914—

SHERMAN BROWN NEFF, Ph. D., Professor of English.

A. B., Yale University, 1908; A. M., *ibid.*, 1909; A. M., Harvard University, 1910; Ph. D., *ibid.*, 1915; Instructor in English, Colby College, Waterville, Maine, 1911-1912; Head of English Department, Salem Classical and High School, Salem, Mass., 1912-1913; Professor of English, New Mexico College of A. and M. A., 1914—

RALPH WILLIS GODDARD, B. S., Professor of Electrical Engineering.

Electrical Contractor, Worcester, Mass., 1905-1911; B. S. in E. E., Worcester Polytechnic Institute, 1911; Estimator on Building Construction, Gascoigne & Shattuck, Boston, Mass., 1911-1913; Instructor in Electrical Engineering, University of Nebraska, 1913-1914; Professor of Electrical Engineering, New Mexico College of A. and M. A., 1914—

MARION SHIRLEY BOWEN, Professor of Practical Mechanics.

Graduate Miller School, Virginia, 1901; Machinist Providence Engineering Company, Providence, R. I., 1901-1902; Machinist Brown & Sharp Mfg. Company, 1902-1904; Instructor in Shop Work, University of Missouri, 1904-1909; Professor of Practical Mechanics, Oklahoma School of Mines and Metallurgy, Wilburton, Okla., 1912-1914; Professor of Practical Mechanics, New Mexico College of A and M. A., 1914—

ABRAHAM C. COOLEY, B. S., Director of Extension Work.

B. S., Utah Agricultural College, 1911; Head of Department of Agriculture, Jordan High School, Utah, 1911-1912; Head of Department of Agriculture, Ogden High School, Utah, 1912-1913; Agricultural County Agent, Colorado, 1913-1914; Director of Extension Work and State Leader of County Agents, New Mexico College of A. and M. A. 1914—

SAMUEL PRUITT HERREN, 1st Lieutenant U. S. Army, Retired, Professor of Military Science and Tactics and Head of Preparatory Department.

Professor of Military Science and Tactics, New Mexico College of A. and M. A., 1914-1916; Professor of Military Science and Tactics and Head of Preparatory Department, 1916—

CLARENCE WILLIAM RUSSELL, B. S., Professor of Physical Education and Director of Athletics.

B. S., University of Chicago, 1908; Football Coach, University of West Virginia, 1907; Football Coach, Colorado School of Mines, 1908; Assistant Football and Track Coach, University of Chicago, 1909; Director of Athletics, Long Beach, Cal., High School, 1910-1913; Professor of Physical Education and Director of Athletics, New Mexico College of A and M. A., 1914—

RUPERT LYONEL STEWART, M. S., Acting Dean of Agriculture and Professor of Agronomy.

B. S., New Mexico College of A and M. A., 1911; M. S., Cornell University, 1914; Instructor in Agronomy, New Mexico College of A. and M. A., 1911-1913; Assistant Professor of Agronomy, 1914-1915; Professor of Agronomy, 1915-1916; Acting Dean of Agriculture and Professor of Agronomy, 1916—

LOUIS ALLEN HIGLEY, Ph. D., Professor of Chemistry.

A. B., Ohio Northern University, 1896; A. M., *ibid.*, 1899; Ph. D., University of Chicago, 1907; Public Schools, Ohio, 1889-1894; Private Academy and College, Illinois, nine years; Chief Chemist, the Kennicott Company, Chicago, 1908-1909; Chief Chemist, the Centralia Mining Company, Guadalajara, Mexico, 1909-1911; Professor of Chemistry, Westminster College, Missouri, 1911-1915; Professor of Chemistry, New Mexico College of A. and M. A., 1915—

CHARLES BERRY NEWCOMER, Ph. D., Professor of Latin and Modern Languages.

A. B., University of Nebraska, 1889; A. M., *ibid.*, 1890; Ph. D., University of Berlin, 1899; Student, University of Berlin, 1890-1891, 1895-1899; Student, American School of Archaeology, Athens, 1904-1905; Fellow in Romance, University of Chicago, 1913-1915; Professor of Greek and Latin, Cotner University, 1891-1893; Master of French and German, Belmont School, 1893-1895; Acting Assistant Professor of Latin, University of Missouri, 1899-1901; Professor of Greek and Instructor in French, Drury College, 1901-1904; Instructor, University of Michigan, 1905-1908; Professor, Transylvania University, 1908-1910; Professor of Romance Languages, Drake University, 1910-1913; Professor of Latin and Modern Languages, New Mexico College of A. and M. A., 1915—

DAYTON EUGENE MERRILL, M. S., Professor of Biology.

B. S., State University of Iowa, 1907; M. S., *ibid.*, 1910; Instructor in Biology, Boone, Iowa, High School, 1907-1908; Fellow in Zoology, State University of Iowa, 1909-1911; Assistant in Zoology, summer sessions, *ibid.*, 1910 and 1911; Assistant Professor of Biology, New Mexico College of A and M. A., 1911-1915; Professor of Biology, 1915—

CHARLES HENRY KUNSMAN, M. S., Professor of Physics.

Graduate Pennsylvania State Normal, East Stroudsburg, Pa., 1910; B. S., Pennsylvania State College, 1914; M. S. in Physics, University of California, 1915; Student Assistant in Physics, Pennsylvania State College, 1912-1914; Assistant in Physics, summer session, *ibid.*, 1912-1914; Assistant in Physics, University of California, 1914-1915; Professor of Physics, New Mexico College of A and M. A., 1915—

FRANK ARTEMAS HITCHCOCK, M. S., Professor of Civil Engineering.

B. S. in C. E., University of Wisconsin, 1910; Graduate Student, Cornell University, 1912-1914; M. S. in C. E., Christian Brothers' College, 1916; Assistant Engineer with P. H. Hintze, Drainage Engineer, summer 1910; Instructor, Putman Agricultural High School, 1910-1911; Assistant Engineer with Hall & Adams, Civil, Mining and Sanitary Engineers, summer 1911; Instructor in Civil Engineering, Cornell University, 1911-1914; Draftsman, Bridge & Building Department, Chicago, Milwaukee & St. Paul Railroad, summer 1912; Assistant City Engineer, City of Edgerton, Wis., summers 1913 and 1914; Instructor in Civil Engineering, Robert College, Turkey, 1914-1915; Draftsman and Computer, Chicago & Western Indiana Railroad, summer 1915; Professor of Engineering, Christian Brothers' College, 1915-1916; Professor of Civil Engineering, New Mexico College of A. and M. A., 1916—

OTHER OFFICERS OF ADMINISTRATION AND INSTRUCTION.

WILLIAM THOMAS CONWAY, B. S., State Leader in Boys' and Girls' Club Work.

A. B., Ouachita College, 1894; B. S., Oklahoma A and M. College, 1910; Principal of Prep. Department, Kendall College, 1898-1902; Vice President of Indianola College, 1902-1905; Principal of High School, Sulphur, Okla., 1906-1909; State Leader in Boys' and Girls' Club Work, New Mexico College of A. and M. A., 1911—

R. V. WARE, Registrar.

Assistant Registrar, New Mexico College of A and M. A., 1914-1915;
Registrar, 1915—

ROBERT WOOD LATTA, B. S., State Leader in Dairy Work.

B. S., Purdue University, 1908; State Leader in Dairy Work, New Mexico College of A. and M. A., 1914—

WILBUR LESTER ELSER, B. S., Farm Management Demonstrator and Assistant State County Agent Leader.

B. S. in Ag., Ohio State University, 1909; Assistant in Department of Cooperation, Ohio Experiment Station, 1909-1914; Assistant in Charge of Farm Management Extension, Purdue University, 1914-1916; Farm Management Demonstrator and Assistant State County Agent Leader, New Mexico College of A. and M. A., 1916—

DEAN WARD BLOODGOOD, Irrigation Engineer.

B. S. in M. E., New Mexico College of A. and M. A., 1908; Assistant in irrigation, 1912-1915; Assistant Irrigation Engineer, 1915-1916; Irrigation Engineer, 1916—

JAMES RILEY MEEKS, B. S., Instructor in Animal Husbandry.

B. S., Purdue University, 1914; Instructor in Animal Husbandry, New Mexico College of A. and M. A., 1914—

FLOY EDNA FRENCH, Librarian.

Student New Mexico College of A. and M. A., 1893-1897; Graduate Commercial Department, 1897; Librarian Branch Delivery Station, Public Library, Chicago, 1901-1905; Librarian, New Mexico College of A. and M. A., 1914—

***ZOE DONALDSON, A. M., Instructor in English.**

A. B. University of Minnesota, 1912; A. M., *ibid.*, 1914; Teaching Assistant in Rhetoric, University of Minnesota, 1912-1913; Shevlin Fellow in English, *ibid.*, 1913-1914; Assistant in English, *ibid.*, 1914-1915; Instructor in English, New Mexico College of A. and M. A. 1915—

HELEN IDA THISSELL, Instructor in Household Economics.

Graduate, Miss Forehand's School of Domestic Science, Boston, Mass., 1904; Graduate, Boston Cooking School Course, Simmons College, Boston, Mass., 1906; Superintendent of Domestic Art, Public Schools, Clinton, Mass., 1908-1911; Instructor in Domestic Science and Art, Public Schools, Springfield, Mass., 1911-1913; Instructor in Domestic Art, Longfellow Evening School, Denver, Colorado, 1914-1915; Instructor in Household Economics, New Mexico College of A. and M. A., 1915—

*Deceased.

FREDERICK CONRAD WERKENTHIN, A. M., Instructor in Botany.

A. B., University of Texas, 1915; A. M., *ibid.*, 1915; Assistant in Botany, University of Texas, 1912-1913; Assistant in Agriculture, summer session, *ibid.*, 1913; Assistant in Bacteriology, *ibid.*, 1913-1915; Instructor in Botany, New Mexico College of A. and M. A., 1915—

JAMES THEODORE BARLOW, B. S., Instructor in Agronomy.

B. S. in Ag., University of Missouri, 1915; Instructor in Agronomy, New Mexico College of A. and M. A., 1915—

BURTON ARRA FITE, B. S., Instructor in Horticulture.

B. S. in Ag., New Mexico College of A. and M. A., 1915; Instructor in Horticulture, 1915—

JAMES GUY HAMILTON, B. S., Instructor in Agronomy.

B. S., in Ag., New Mexico College of A. and M. A., 1915; Instructor in Agronomy, 1915—

EDWARD JACKSON MAYNARD, B. S., Instructor in Animal Husbandry.

B. S., in Ag., New Mexico College of A. and M. A. 1915; Instructor in Animal Husbandry, 1915—

GAIL RITCHIE, B. S., State Leader in Home Economics.

B. S., University of Missouri, 1915; State Leader in Home Economics, New Mexico College of A. and M. A., 1916—

CLARENCE PENDLETON WILSON, M. S., Experiment Secretary and Editor of Agricultural Publications.

B. S., New Mexico College of A. and M. A., 1908; M. S., *ibid.*, 1911; Extension Stenographer, 1911-1915; Extension Secretary and Editor of Agricultural Publications, 1915-1916; Experiment Secretary and Editor of Agricultural Publications, 1916—

ARNOLD ZANE SMITH, B. S., Instructor in Agronomy.

B. S., Washington Agricultural College, 1914; Instructor in Agronomy, New Mexico College of A. and M. A., 1916—

ROYAL BURLEIGH THOMPSON, B. S., Instructor in Poultry Husbandry.

B. S., Oregon Agricultural College, 1913; Foreman, Oregon Agricultural College Poultry Yards, 1913-1916; Instructor in Poultry Husbandry, New Mexico College of A. and M. A., 1916—

JOSEPH WHEELER RIGNEY, B. S., Instructor in Horticulture.

B. S. in Ag., New Mexico College of A. and M. A., 1911; Chaves County Agricultural Agent, 1915-1916; Instructor in Horticulture, 1916—

JOHN DEALY HUNGERFORD, B. S., Nutrition Chemist.

B. S., Kansas State Agricultural College, 1915; Graduate Student, *ibid.*, 1915-1916; Fellow in Chemistry, *ibid.*, 1916; Nutrition Chemist, New Mexico College of A. and M. A., 1916—

GLADYS ELIZABETH CARROON, B. Pd., Instructor in Business Education.

B. Pd., New Mexico Normal University, 1914; Graduate Student, *ibid.*, summer of 1914; Assistant Librarian, *ibid.*, 1912-1914; Instructor in Commerce, Las Cruces High School, 1914-1916; Instructor in Business Education, New Mexico College of A. and M. A., 1916—

LEVI STANLEY BROWN, B. S., Instructor in Chemistry.

B. S., New Mexico College of A. and M. A., 1916; instructor in Chemistry, 1916—

KATRINA CURTIS MORSE, Instructor in Music.

Graduate of Washington Seminary, Washington, D. C., 1908; Von Unschuld University of Music, Washington, D. C., 1914; Pupil of M. Kathryn Linton, Lucy Barbour Ewing, and Madame Marie von Unschuld; Instructor in Piano, Harmony, and Music History, Washington, D. C., 1914-1916; Instructor in Music, New Mexico College of A. and M. A., 1916—

JOHN WILLIAM JOURDAN, B. S., Instructor in Irrigation and Civil Engineering.

B. S. in C. E., Purdue University, 1913; Instructor in Irrigation and Civil Engineering, New Mexico College of A. and M. A., 1917—

KENNETH BUSHNELL OGILVIE, B. S., Assistant in Irrigation.

B. S. in E. E., New Mexico College of A. and M. A., 1914; Assistant in Irrigation, 1916—

WILLIAM EMIL TARBEL, Instructor in Practical Mechanics.

Instructor in Practical Mechanics, New Mexico College of A. and M. A., 1917—

JOSE QUINTERO, B. S., Assistant in Chemistry.

B. S. in M. E., New Mexico College of A. and M. A., 1907; Assistant in Chemistry, 1911—

JOSEPH HARRINGTON TOULOUSE, Assistant State Leader in Boys' and Girls' Club Work.

MANRIQUE RODRIGUEZ GONZALEZ, B. S., San Miguel County Agricultural Agent.

B. S. in Ag., Agricultural College of Utah, 1912; San Miguel County Agricultural Agent, New Mexico College of A. and M. A., 1914—

JOHN WILLIAM KNORR, B. S., Eddy County Agricultural Agent.

B. S. in Ag., New Mexico College of A. and M. A., 1913; Eddy County Agricultural Agent, 1915—

ROLAND HARWELL, Torrance County Agricultural Agent.

Instructor in Agronomy and Farm Superintendent, New Mexico College of A. and M. A., 1914-1915, Torrance County Agricultural Agent, 1915—

HERBERT CLYDE STEWART, B. S., Bernalillo County Agricultural Agent.

B. S. in Ag., New Mexico College of A. and M. A., 1909; Bernalillo County Agricultural Agent, 1916—

VERE LORRAINE MARTINEAU, B. S., Colfax County Agricultural Agent.

B. S. in Ag., Agricultural College of Utah, 1912; Colfax County Agricultural Agent, New Mexico College of A. and M. A., 1914—

EDWARD HEBER DIVELBISS, B. S., Chaves County Agricultural Agent.

B. S. in Ag., Colorado Agricultural College, 1914; Instructor in Horticulture, New Mexico College of A. and M. A., 1914-1916; Chaves County Agricultural Agent, 1916—

ORREN BEATY, B. S., Union County Agricultural Agent.

B. S. in Ag., Oregon Agricultural College, 1909; Union County Agricultural Agent, New Mexico College of A. and M. A., 1916—

ERASTUS PETERSON, B. S., Curry County Agricultural Agent.

B. S. in Ag., Utah Agricultural College, 1910; Assistant Agronomist and Foreman of College Farm, *ibid.*, 1910; Manager of Demonstration Farm, Metropolis, Nevada, 1911-1912; Farming in Nevada, 1912-1917; Curry County Agricultural Agent, New Mexico College of A. and M. A., 1917—

HAROLD HEMINGWAY BROOK, Dona Ana County Agricultural Agent.

Student Illinois College, 1903-1905; Newspaper Editor and Reporter, 1905-1908; Farming in New Mexico, 1908-1917; Dona Ana County Agricultural Agent, New Mexico College of A. and M. A., 1917—

JUAN MANUEL RAMIREZ, Santa Fe County Agricultural Agent.

Government Soil Survey of Dona Ana County, 1911-1912; Superintendent of Farms and Gardens, United States Army, General Hospital, Fort Bayard, N. M., 1912-1915; Foreman "Thousand Acre" Ranch, Dona Ana County, 1915-1917; Santa Fe County Agricultural Agent, New Mexico College of A. and M. A., 1917—

RUTH FLORENCE BROWNLEE, Secretary to the President.

GEORGE BRACIE WESTLAKE, Assistant Registrar.

CLAUDE IRA DEPUY, Executive Secretary Extension Service.

Graduate, Gem City Business College, Quincy, Ill., 1910; Secretary to Solicitor, Philippine Customs Service, 1911-1914; Extension Student, Hamilton College, 1915-1916; Stenographer, States Relations Service, U. S. Department of Agriculture, 1915; Forest Clerk, U. S. Forest Service, 1916; Executive Secretary, Extension Service, New Mexico College of A. and M. A., 1917—

IDA BELLE GRUMBLES, Stenographer Registrar's Office.

ONIS LONGBOTTOM, Extension Clerk.

JESSYE EDNA HORNIDY, Extension Secretary.

IVINS ROGERS TILTON, Matron Girls' Dormitory.

JOHN ENGDAL, 1st Sergeant, U. S. Army, Retired.

EDWIN CONDIT HOLLINGER, Assistant Librarian.

ALVA NICHOLS, Assistant in English.

ROBERT GEIB FOSTER, Assistant in Chemical Laboratory.

LOUIS HURD KRONIG, Assistant in Chemical Laboratory.

COMMITTEES OF THE FACULTY.

Course of Study. Professor Barnes, Chairman, Professors Stewart, Merrill, Miller, Vaughan, and Lieutenant Herren.

Discipline. Lieutenant Herren, Chairman, Dr. Neff, Mrs. Winningham, and Professor Goddard.

Student Publications. Dr. Neff, Chairman, Professor Stewart, and Dr. Higley.

Publicity. Professor Stewart, Chairman, Professors Barnes and Russell, and Mr. Wilson.

Lyceum Course. Professor Vaughan, Chairman, Professors Hagerty and Foster.

Social Functions. Mrs. Winningham, Chairman, Professors Merrill, Hoblit, and Miller.

Student Labor. Professor Foster, Chairman, Professors Garcia, Bowen, and Russell, Lieutenant Herren, Mrs. Winningham, and Mr. Ware.

Catalog. Dr. Neff, in consultation with the President and the Course of Study Committee.

General Information

HISTORICAL SKETCH

In 1889, Las Cruces College was organized by Professor Hiram Hadley. This furnished the nucleus of the College of Agriculture and Mechanic Arts, which opened its doors for its first session on March 10, 1890, with Professor Hadley as its first president.

The New Mexico College of Agriculture and Mechanic Arts is one of about fifty "land grant colleges" established in the several states of the Union in accordance with the provisions of an act of Congress approved July 2, 1862, commonly known as the Morrill Act. This historic measure marked the beginning of a new era in education. The purpose and scope of the institutions which were to be established under this act are set forth in the words of the act, which provides for a grant of land to each state for the establishment and maintenance of "at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." These colleges then were to offer both "liberal and practical education," both cultural and professional training, for the benefit of the industrial classes, the people who work.

On February 28, 1889, the 28th Legislative Assembly of New Mexico passed an act establishing the College and accepting for it the appropriations which had been made by Congress. The act further defined the character and purposes of the institution. It "shall be non-sectarian in character, devoted to practical instruction in agriculture, mechanic arts and natural

sciences connected therewith, as well as a thorough course of instruction in all branches of learning bearing upon agricultural and industrial pursuits. The course of instruction of the college hereby created shall embrace the English language, literature, mathematics, philosophy, civil engineering, chemistry, animal and vegetable anatomy, and physiology, the veterinary art, entomology, geology, political, rural and household economy, horticulture, moral philosophy, history, mechanics, and such other sciences and courses of instruction as shall be prescribed by the regents."

By its further act of February 26, 1891, the legislature of New Mexico accepted the congressional appropriation of 1890 and accepted and consented to all the terms and conditions upon which it was made, including the principle that the Territory should make adequate provision for buildings, grounds, and general expenses of maintenance, while the funds received from the federal government are to be applied to the maintenance of the Experiment Station and to the cost of instruction and the facilities for instruction in certain specified branches.

LOCATION.

The New Mexico College of Agriculture and Mechanic Arts is located at Mesilla Park, New Mexico, in the Rio Grande Valley, in the central southern part of the State. The college buildings are about one mile from the Mesilla Park railway station, and about two and one-half miles from the town of Las Cruces, county seat of Dona Ana county, and forty miles north of El Paso, Texas. The main line of the A. T. & S. F. Railway from Chicago to El Paso runs through the college property.

This region, known as the Mesilla Valley, is one of the richest agricultural districts in New Mexico. There are twenty-five thousand acres of land under irrigation within ten miles of the College. All of this land is under the great Elephant Butte Dam and Engle Reservoir, which, recently com-

pleted, at an estimated cost of \$8,000,000, is the greatest work yet undertaken by the United States Reclamation Service.

The College has its own post office, the name of which is State College, New Mexico. The railroad, express, and telegraph address is Mesilla Park, New Mexico.

INCOME.

The following funds constitute the income of the College:
FROM THE UNITED STATES GOVERNMENT:

Morrill Fund, \$50,000 a year. This is expended under the supervision of the United States Commissioner of Education, and is available only for instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural, and economic sciences, with special reference to their application in the industries of life, and to the facilities of the institution.

Hatch Fund, \$15,000 a year, for the support of the Agricultural Experiment Station. "to pay the necessary expenses of conducting investigations and experiments, and printing and distributing the results."

Adams Fund, \$15,000 a year, for the Experiment Station for research work of distinct originality and scientific value. The Hatch and Adams funds are expended under the supervision of the Office of Experiment Station of the United States Department of Agriculture.

Smith-Lever Fund. The College will receive during the fiscal year of 1916-17 an appropriation of \$16,257.54 from the Smith-Lever Agricultural Extension Bill, which became a law during May, 1914. This fund, which is expended entirely for extension and demonstration work, is annually increased by Federal and State appropriations and should reach approximately \$64,000 in 1922.

FROM THE STATE:

The appropriation for maintenance for the fiscal year be-

ginning December 1, 1917, is \$33,000; for Experiment Station \$7,500; for Extension Work, \$9,400.

In addition to the above sources of income, the College receives a few thousand dollars annually from the sale of farm products, tuition fees of non-resident students, etc., and about one thousand dollars as interest on permanent funds. The College has an endowment of 250,000 acres of land granted by Congress under the acts of 1898 and 1910, but at present derives no income from this source.

EDUCATIONAL PURPOSE.

The purpose of this institution is expressed in the words, "liberal and practical education". The aim is to teach the student those things which make for intelligent manhood and citizenship, and also to give him some special training which will enable him to earn a living. All the courses contain both cultural and technical work. The purpose of the technical and industrial work is to teach him to make a better living; the purpose of all the work, both technical and cultural, is to teach him to live a richer and more useful life.

ORGANIZATION.

The work and functions of the College fall into three grand divisions—instructional service, experiment station service, and extension service. The instructional service, involving the greater part of the educational work carried on at the College, embraces the college, preparatory, industrial, and trades courses. The College proper comprises the School of Agriculture, the School of Engineering, and the School of General Science. The department of household economics is listed in this catalog as a division of the School of Agriculture. The School of Agriculture and the School of Engineering are under the immediate management of their respective deans; the Experiment Station and the Extension Service are likewise each under the supervision of a director; but the edu-

cational policy of the institution, in matters of general concern, is directed by the President and the faculty as a whole.

COLLEGE COURSES.

The College offers seven regular courses of study, extending through four years, and leading to the degree of Bachelor of Science. They are:

- I Agriculture.
- II Household Economics.
- III Civil Engineering.
- IV Electrical Engineering.
- V Irrigation Engineering.
- VI Mechanical Engineering.
- VII General Science.

These courses presuppose a full high-school training for entrance. With the exception of the General Science, they are professional courses. Each of them includes a thorough grounding in the fundamental sciences, a certain amount of general cultural work in English, history, economics and languages, and a large amount of both theoretical and practical work in the special subject of the course. We expect those who complete these courses to be men and women of broad general education, with full technical equipment for the work of their several professions.

COLLEGE PREPARATORY.

The College Preparatory comprehends the equivalent of the work done in four years' high school course. The scarcity of good high schools in New Mexico makes it necessary to offer such a course for the benefit of students preparing for college. It is not the purpose of this department to attract students away from the schools of their home towns, but to provide a standard preparatory course with a high grade of instruction and equipment for students who do not find these facilities at home.

This department offers in addition to courses preparatory to college entrance, a very liberal range of work to that large body of young people who seek training for practical ends and whose preparation will not extend beyond the work of the high school. The program of studies, given on another page, is administered in accordance with the following plan:

All those who expect to graduate from the preparatory department will be required to complete at least fifteen units, each unit equivalent to a course extending through a school year in classes meeting four or five times a week. All are required to take four units of English, two units of history and civics, one unit of mathematics, and one unit of general science. Those preparing for entrance to college courses in agriculture must take, additionally, one unit of plane geometry; those preparing for entrance to college courses in household economics must elect one unit of plane geometry and one unit of elementary chemistry; those preparing for entrance to college courses in engineering and general science must elect one unit of plane geometry, one half unit of solid geometry, and one half unit of advanced algebra. The remainder of the work necessary to complete the minimum of fifteen units may be freely elected; but students who intend to pursue college courses in agriculture or household economics should not elect the subjects offered from those courses to students in the preparatory department.

The number of individual four-year courses leading to college entrance, owing to this freedom of election, is potentially very large; while the possibilities open to those who are not preparing for college are still more numerous. To the student seeking training for immediately practical ends, five main lines of work are offered, namely:

(a) Courses in the elements of agriculture—livestock, plant propagation, farm motors and machinery, field crops, gardening, farm poultry and dairying.

(b) Courses in household arts and science—sewing, cooking, household accounts.

(c) Courses in practical mechanics—manual training, free-hand and mechanical drawing, engineering drawing, woodwork, machine shops and forging, pattern making and foundry practice, automobile and gas engine practice.

(d) Courses in business education—typewriting, stenography, business English, industrial geography, business arithmetic, business law, and bookkeeping.

(e) Courses for those expecting to teach—drawing and manual training, elementary psychology, rural education, elements of agriculture and home economics.

These specialized courses are designed to meet the needs of students desiring an industrial high-school training. They are intended primarily for the boy or girl who does not expect to enter college, but wants something of more practical value than the ordinary high school provides. The boy who finishes the courses in agriculture and mechanics ought to be a practical and intelligent farmer. He will not be a profound specialist in agriculture or engineering, but he ought to be able to manage a farm by modern methods and make money, and he ought furthermore to be an intelligent and useful citizen and a helpful member of society. The girl whose preparatory course includes the electives offered in domestic science ought to know how to cook plain, wholesome meals, sew, care for the sick, furnish a house, maintain sanitary conditions, and manage in an artistic and economical way the affairs of a household. Special students who are interested primarily in business education may take the courses offered in this department independently of the regular college preparatory.

Admission to regular enrollment in the preparatory department is granted only to those who have satisfactorily completed the work of the eighth grade of the public schools.

INDUSTRIAL COURSE IN MECHANICS.

The object of the Industrial Course in Mechanics is to enable young men who cannot comply with the ordinary entrance requirements, to still derive benefit from our school. No specific course is outlined for these students but rather courses are arranged to suit the ability and needs of the individual.

The student may take one or two years of this work, and for satisfactory completion of any subject or subjects a certificate will be issued.

Stress in this work is laid on a practical knowledge of gas engines and automobiles. Extended work is given in babbitting, soldering, lathe work and vulcanizing as a foundation. Then the student is instructed in the construction and operation of engines, starting and lighting systems, etc. Along with this course machine-shop work, forging, or carpentry may also be taken.

Our plan is to keep to the practical with this type of student. For instance, no lengthy study or discussions will be given as to the principles involved in the different makes of gasoline engines, but rather the aim will be to teach the student why a stalled engine will not run, or what is the matter with an automobile which will not go, and how to make it go.

An effort will be made to allow each student to choose the line on which to spend most of his time, but the instructor reserves the right to require of any student that he give part of his time to such other subjects as might make of him a more efficient workman in the branch upon which he wishes to specialize. For example, a student taking automobile repair work, may be required to take forge work.

SIX WEEKS' WINTER COURSE IN AGRICULTURE AND PRACTICAL MECHANICS.

The Six Weeks' Winter Course in Agriculture and Practical Mechanics, has been established to meet the demand of

those New Mexico farmers and their sons who are unable to avail themselves of the other courses in agriculture and engineering offered by the College. There are a number of young men in this State who are so situated that it is impossible for them to be absent from their homes during the nine months of the college year, but yet who desire some training in the principles of agriculture and practical mechanics. There are also mature men who are past the usual school age, but are ambitious to become familiar with the most recent agricultural thought and practices.

With these general facts in mind this short winter course has been planned. It offers an admirable opportunity for busy men and boys to become familiar with the latest results in research and their practical application to work on the farm. There is no maximum age limit in this course, but boys under high school age are not admitted.

A large amount of instruction is crowded into a brief period, all of which is practical in nature, consisting of demonstration lectures and laboratory work. This instruction covers the following branches: agronomy, including work in grain judging, crop rotations, seed treatment, farm accounts, soils, and field machinery; animal husbandry, including work in stock judging, stock feeding, animal breeding, dairying, live stock management, and home curing of meats; horticulture, including work in fruit growing, pruning, spraying, canning, vegetable gardening, and insects; practical mechanics, including work in wood turning, farm carpentry, forging and automobile repair.

For the benefit of the ranchman or farmer who wishes to know the proper care of machinery and automobiles a six weeks' course is given covering automobile and gas engine problems and their solution.

These six weeks' courses in agriculture, practical mechanics, and automobile practice begin near the end of the first

week in January of each school year. The exact date is announced in the college calendar on page 7 of this catalog.

ONE YEAR TRADES COURSES.

To meet the needs of young men who wish short practical courses but may not be able to fulfill the ordinary entrance requirements, a one year's course is offered. Students in this course spend the morning in classes in arithmetic and English suited to their needs. The entire afternoon is devoted to shop instruction, given by a competent workman. A knowledge of English is not required for entrance, but applicants must be at least sixteen years old.

COURSE FOR STUDENTS WISHING TO STUDY MEDICINE.

A two years' college course for students who wish to meet the admission requirements of medical schools is offered in this institution.

REQUIREMENTS FOR ADMISSION.

COLLEGE COURSES. For entrance to the Freshman class in any of the college courses, a student must present credits amounting to a four years' high school course of not less than fifteen units. A unit is the equivalent of one hour of recitation or two hours of laboratory work daily for thirty-six weeks). Special cases of mature students who wish to pursue college courses, but cannot present formal credits covering the required amount of preparatory work, will be considered on their merits.

It is recommended that the credits offered for entrance conform as nearly as possible to the course of study of the College Preparatory, given on another page of this catalog. A student, regardless of the number of units offered for entrance, will be conditioned in any preparatory subject which he has not had that must necessarily precede a required subject in his college course.

SECONDARY COURSES. To enter the first year of the college preparatory or any of the industrial courses, the student must have completed the eighth grade in the common schools.

CREDENTIALS. The student who expects to matriculate in this institution and wishes to receive credit for work done in some other school is advised to send his credentials to the President during the summer vacation, together with a definite statement of what course he wishes to take. If for any reason such credentials cannot be sent in advance of the student's arrival, he must be sure to bring them; otherwise he may be required to take the entrance examinations.

TIME TO MATRICULATE. *Particular attention is called to the fact that it is very much to the advantage of the student to be on time for matriculation. By doing so he avoids all loss of recitations at the beginning of his course as well as the payment of a late registration fee of one dollar.*

SPECIAL STUDENTS.

Students of mature age, or those who have clearly defined special needs which are not served to the best advantage by any of the regular courses, may be admitted as special students. A student cannot become a special by failing in any part of his college work, or merely for the purpose of avoiding some college requirement. Before a student will be classified as a special student, he must:

(1) Present to the President a written statement of his reason for wishing to take a special course. Such statement must show a serious purpose and desire to accomplish a regular course. It should include a statement of the line of work desired, and, in the case of a new student, should be accompanied by a statement of the work already done in other institutions.

(2) If a minor, present the written consent of the parent or guardian.

(3) Obtain the approval of the President.

(4) Pay a fee of five dollars a year in addition to the fees paid by regular students.

A student who has been accepted as a special student may elect any of the college, the preparatory, or the secondary technical courses, subject to the approval of the head of the department, who shall be the judge of his preparation for the work desired.

The institution offers a large variety of courses, both secondary and collegiate, so that, in all but very exceptional cases, the student will find a regular course to meet his needs. It is particularly urged that, as far as possible, all students enroll in regular courses. At the same time, it should be understood that the entire resources of the institution are open to the serious student with a definite purpose which cannot be served properly by a regular course.

IRREGULAR STUDENTS.

Students who, at the time of their entrance, are deficient in certain subjects or have credits in excess of those required, and students who fail in one or more subjects, may be temporarily irregular. They will be enrolled with the class to which they most nearly belong and will be held to the requirements of the course and class in which they are enrolled. The fact that a student is irregular will not be considered as a reason for enrolling him as a special and releasing him from the requirements of the regular courses.

FEES AND DEPOSITS.

The following yearly fees and deposits are due at the time of registration:

Entrance fee	\$20.00
*Library deposit	2.50
Military uniform	25.00
Total	<hr/> \$47.50

All male students, except those taking the six weeks' winter course in agriculture and practical mechanics, will at the time of registration, be required to purchase a uniform, but this should not be considered an additional expense, as the uniform is required to be worn on all school days, and takes the place of a regular suit of clothes. The military uniforms are made to individual measure, are furnished the College at a low wholesale price, and are sold to students at cost. For description, see Military Department.

Students from states other than New Mexico pay a tuition fee of \$10.00 a year, and students from foreign countries one of \$50.00 a year, in addition to the entrance fee.

Those who enter at any other time than upon the days announced as regular registration days, pay a late registration fee of \$1.00.

Special students pay an extra fee of \$5.00.

No portion of the fees will be refunded to students who leave school before the close of the year.

The following deposits are required for courses in which breakable apparatus is used by students: Chemistry, \$5.00. Biology courses 16 and 19-20, \$2.50. Mechanical Engineer-

*The library deposit is refunded to the student at the close of the year, or upon withdrawal from College, less charges for damage to or loss of college property.

ing, \$5.00. These deposits are refunded, less charges for breakage or damage.

Students in furnace assaying pay a fee of \$7.50 in addition to the chemistry breakage deposit of \$5.00.

Any student who ceases to attend classes for one week without excuse, or who leaves college without having secured a withdrawal card and an honorable dismissal, will be considered as dismissed without honor and will forfeit all deposits.

For rates for private instruction in music, see Department of Music.

Text-books and stationery are sold to students at cost at the college book store and supply room.

BOARD.

The college dining room in McFie Hall has accommodations for about one hundred persons, or about fifty more than the number who room in the building. A large number of the young men take their meals there. The price of board without room at McFie Hall is \$16 a month, payable in advance at the Registrar's office. This is absolute cost. In the vicinity are a number of boarding houses and several private families who accommodate students with board.

GIRLS' DORMITORY.

McFie Hall, the dormitory for young women, will accommodate about fifty students. The price for board per calendar month, with room, light and heat, is \$20 when two young women occupy a room. This amount is payable in advance on the first of each month. Young women who desire to occupy a room alone will be charged \$24.00 per month. The rooms are comfortably furnished, but each student must provide comforts, blankets, sheets, pillow-slips, towels, napkins, napkin-

ring, and two laundry bags. The student's name must be plainly marked on all pieces. A spoon and glass should be brought for use in the room.

All young women students are under the supervision of the Dean of Women, who is also the head of McFie Hall. Rooms should be reserved in advance by addressing the Dean of Women or the Registrar.

It is the policy of the College that young lady students shall be required to room and board at the Girls' Dormitory unless they stay with relatives or others in the vicinity who will be fully responsible for them as guardians or chaperones.

BOYS' DORMITORY.

On the college campus near the Administration Building is the Boys' Dormitory, which will accommodate about sixty students. Room rent in this building is \$4 a month for each boy, two in a room. The young men are also expected to furnish their bedding (except mattress and pillow). The price named covers the cost of light and heat. The dormitory is in charge of a member of the faculty and study hour periods are enforced. There is no dining hall in connection with the building, but boys who room in this dormitory can secure board at McFie Hall.

ESTIMATE OF NECESSARY EXPENSES.

Matriculation fee	\$ 20.00	\$ 20.00
Nine months' board and lodging at \$20 to \$24	180.00 to	216.00
Laundry per month at \$1.00	9.00	9.00
Books and stationery	10.00 to	20.00
Military uniform	25.00	25.00
Incidentals	10.00 to	15.00
Total	\$254.00 to	\$305.00

The average actual expense is about \$275 for the college year, including uniform, but not including other clothing and traveling expenses. The matriculation fee named above carries with it the privilege of attending all athletic contests held under the direction of the department of physical education, admission to all numbers of the college lyceum course, one copy of the annual publication of the Junior class, "The Swastika," and subscription to the student weekly, "The Round-Up," without additional cost to the students.

When satisfactory advance arrangements are made with the Registrar, charge accounts of students will be opened covering expenses for board and room, textbooks, and sundry school supplies such as are kept for sale at the College. Settlement may be made by parents for such accounts on itemized statement rendered monthly by the Registrar.

Where advisable, student funds may be deposited with the registrar and paid out at the discretion of the students or their parents. This practice is encouraged, as it makes for economy and affords parents the opportunity of keeping expenses down to the minimum.

SELF SUPPORT.

There is considerable labor on the farm, in the shops, and in the laboratories, that can be performed by students, and the policy is to give it to students rather than to others. Some students have been able to earn enough money during the year to pay their expenses; but those doing so have had constant employment in some subordinate position. The College cannot guarantee to furnish work for all students who wish, or need it, in sufficient amount to pay expenses, but the college stands ready to help every worthy and industrious student who wants to help himself. In assigning work, preference is given to those who are most worthy and meritorious, and who are regular and punctual in attendance, and correct

in department. This labor is paid for at the rate of from fifteen to twenty cents per hour, but the College reserves the right to limit the amount of work any student may do. In general, an energetic young man who wishes to work can count on earning enough to meet about half of his expenses. Many do better than this.

COLLEGE ORGANIZATIONS.

The public exercises of all college organizations are subject in time, place, and character to the approval of the President or faculty. When possible, notice should be handed to the President two weeks before the date desired for the exercise.

The faculty reserves the right of passing upon the constitution and by-laws of all college organizations.

THE STUDENT BODY.

For several years there has been an organization of the students known as the Student Body, which has had for its object the promotion of college spirit and the welfare of the student organizations in general. This organization adopted a constitution embodying a commission form of government under which each class or department elects two representatives, the resulting commission transacting all business of the student body. The acts of the commission are subject to initiative petition and vote of the student body as a whole. The constitution also establishes the honor system, by which the conduct of any student may be investigated and acted upon by the commission. The Student Body has control of the college weekly paper and elects its editor at the close of each school year.

THE ROUND-UP.

The "New Mexico Collegian," founded in 1893 by the

Columbian Literary Society, and the "College Weekly," founded in 1906, by the Steographers' Association, combined in 1907, forming "The Round-Up," a weekly under the control of the student body. The publication is in newspaper form. Its marked success has been due largely to the work of the editorial staff and the strictly business basis upon which it is conducted.

THE COLUMBIAN LITERARY SOCIETY.

This organization is a revival of the old Columbian Literary Society which held for many years a prominent place in the student life of the College. The constitution admits only male students as members of the society. Meetings are held fortnightly and special prominence is given to oratory, debating and parliamentary practice. An annual debate is held between the members of the Columbian and Atadida Literary societies. The work of these societies, stimulated by the state contests and prizes offered by the Alumni, is creating an ever-increasing interest in public speaking.

THE ATADIDA LITERARY SOCIETY.

This is a literary society formed by the young women of the College, and has virtually the same aim as the Columbian. Some excellent and earnest work has been done during the past years, and the members feel that they have derived great benefit from it. Members of the Atadida Society may take part in most of the contests open to the Columbians. Every young woman in College should join this society.

AGRICULTURAL CLUB.

In order to foster a spirit of co-operation among the students and between the students and faculty, and to increase the interest in the agricultural work generally, this club has been organized and officered by the students under the direction of the agricultural faculty. The work of the club consists

of weekly meetings for the purpose of hearing papers read by students, by visitors, and by the faculty members, with an occasional social affair to which the general public is invited. Regular meetings are held each Wednesday night.

ENGINEERS' CLUB.

The Engineers' Club, formed in the earlier years of engineering at this institution and reorganized in 1914, holds meetings regularly twice a month. Its purpose is the fostering of engineering and good fellowship by means of student papers and addresses by the faculty and outside engineers. Through this organization inspection trips are conducted to points of engineering interest around the College, such as Elephant Butte Dam and El Paso.

ATHLETIC ASSOCIATION.

In 1893, the students organized the first Athletic Association to encourage and promote physical education and hygienic training of its members and to foster all athletic sports suitable for college students. The Association has been in continuous existence since that date and has expanded and developed until it is better organized and equipped, with athletic goods and grounds, and with funds to carry on the work than any like organization in the State.

In 1912, it was voted by the students and approved by the board of regents that part of the matriculation fee should be used to support athletics, and that all students paying this fee should be members of the Athletic Association with the privilege of attending all athletic contests held under the direction of the department of physical education without additional charges.

Under the present organization the affairs of the Association are under the direct supervision of the head of the department of physical education. The athletic board, which

consists of five members of the Athletic Association and the head of the department of physical education, acts in an advisory capacity.

The value of this organization may be judged by the successful teams turned out by the College since 1912. In 1913, the "Aggie" football team won the championship of the southwest. The following spring the track team won first place in the annual track and field meet of the Southwestern Amateur Association. The fall of 1914, our football team successfully defended its title to the state championship. Later in the same year our girls' basketball team was not defeated in the State, and the college baseball team won twelve out of thirteen games played against amateur teams, thereby getting a clear title to the Amateur Championship of New Mexico and southwest Texas. During college year, 1915-16, the football team lost but one championship game.

The college athletic field is by far the best field for football, baseball and track work of any in the State. Besides this we have the large, well lighted gymnasium floor, 40'x90', suitable for gymnasium classes, folk dancing and basketball; four tennis courts, two out-door basketball courts and a volley ball court; all of which are maintained by the Association for the use of the students.

THE YOUNG MEN'S CHRISTIAN ASSOCIATION.

No organization in the College occupies a more prominent or essential place than the Young Men's Christian Association; none offers larger opportunities for individual service; none exerts a more healthful influence on the student body as a whole. The Association owns a large two-story building, erected by liberal popular subscription, and handsomely equipped with dormitory, rest, and reading rooms. With this building as a center, various lines of religious and social activity are carried on. Sunday and mid-week meetings are held, bible classes are conducted, and extension work of

various kinds is done. The membership of the Association comprises a large proportion of the students and faculty of the College.

THE YOUNG WOMEN'S CHRISTIAN ASSOCIATION.

Over seventy-five per cent of the young women in the College are members of the Young Women's Christian Association. The regular devotional meetings are held on Friday of each week, and are led by ministers from some of the nearby churches, members of the faculty, or other able speakers. The society is visited annually by the State Secretary, and frequently by the National Secretary, and one or more girls are usually sent to the yearly conference in Cascade. The ideal of preparation for personal service is kept always uppermost, and the wholesome, helpful influence of the Association on the life of the College can hardly be estimated.

CHURCHES.

All students are trained in the principles of morality, but no sectarian teaching is tolerated in the College. The religious activities of the students, however, are not confined to the Young Men's and the Young Women's Christian Associations. The usual services are held every Sunday at the Presbyterian and Episcopal Churches of Mesilla Park, also at the Catholic, Presbyterian, Methodist, Baptist, and Episcopal churches of Las Cruces. Entire freedom of choice is given the student in selecting the church he will attend.

DISCIPLINE AND GOVERNMENT

By the creation of the College of Agriculture and Mechanic Arts there has been provided for the youth of New Mexico the fullest and best opportunities to secure a practical education. Students who enjoy the advantages here offered should realize that to forfeit these privileges on account of their misuse or abuse is a matter of the most serious concern.

This institution has no written rules relating to the conduct of students, but any violation of the accepted code is dealt with by the President or faculty council as the particular case may demand. As regards behavior, students are expected to conduct themselves as ladies and gentlemen. If, after a fair trial, the influence of any student is found to be detrimental to scholarship, morals, or good order, dismissal will follow. This is pre-eminently a place for serious and earnest students.

ABSENCE AND TARDINESS.

Any student who has been absent from class and has failed to render an excuse within two days after returning may be excluded from all classes until a satisfactory explanation has been made, and will be given a daily grade of zero in all classes until reinstated. Women students must render excuses for absence from classes to the Dean of Women; male students to the President or such instructor as he may designate. A student will be given a daily zero for each absence unexcused, unless the work is made up to the satisfaction of the instructor.

Any student who is more than ten minutes late at class must render an excuse the same as for absence. A student who is not more than ten minutes late may be excused at the discretion of the instructor.

MISCELLANEOUS.

It is the duty of any instructor or other college officer to note and rebuke violations of good order.

No student whose work is unsatisfactory shall be permitted to take part in any public exercise connected with the College.

A student excused from military drill for physical disability or other reason, shall be required to take either correc-

tive physical exercise or additional class-work to the amount of three practice hours each semester.

All students are required to attend a general assembly once a week.

EXAMINATIONS.

Examinations for college students are held at the end of each semester; for preparatory and industrial students at the middle and end of each semester. Entrance examinations are held at the beginning of the first semester. Students whose class work is given grades A or B may, at the option of the instructor, be excused from examination. Reports are sent to parents or guardians of all students after each examination.

SYSTEM OF GRADING AND CREDITS.

In accordance with the system of grading adopted in this institution, the letters A, B, C, D, and E are used,—these letters having the following significance: A, 90-100 per cent., indicating excellent work on the part of the student; B, 80-89 per cent., indicating good work; C, 70-79 per cent., indicating fair work; D, 55-69 per cent., indicating condition; E, below 55 per cent., indicating failure. Plus and minus signs after the letters may be employed or not as the instructor chooses. A student's work is recorded as incomplete only when not fully performed for good and sufficient reason,—such as late entrance, sickness, etc.,—the time limit for the removal of such incompleteness to be determined by the instructor in charge. Work otherwise unsatisfactory is recorded as condition or failure as the case may be. Students who are conditioned may remove the condition by a special examination or by study outside of class that meets with the approval of the instructor. All conditions must be removed at least two weeks before the end of the semester following their

incurrence. Students who fail must take the work again in class.

College credit is reckoned in terms of units. A unit of college work is the equivalent of one hour of recitation or two hours of practice per week for eighteen weeks or one semester. A minimum of one hundred and fifty units is required for the completion of any of the regular college courses. This number includes six units of credit allowed for military drill and physical culture. In other words, in order to graduate from this institution, the student must do satisfactory work to the extent of eighteen credit hours per week throughout the four years, and, in addition, three practice hours per week in military drill or physical culture through the Freshman and Sophomore years. Neither military drill nor physical culture will be required of students entering with Junior or Senior standing; nor will the requirements in these subjects be retro-active on students entering with advanced standing below the Junior year.

No credit in any course is given for less than a full semester's work.

CLASSIFICATION.

Students are classified according to the number of units they have completed. Thirty-six units of college work are required in each year of the college course, in addition to the military drill or physical culture, required of all able bodied students not classified as Juniors, Seniors or graduates.

No student taking a regular course is allowed to take any subject in that course until he has passed in all preceding work necessary to fit him for that subject. Neither will such a student be excused from any prescribed work in that course except by action of the President.

No special student is allowed to enter any class unless in

the opinion of the instructor in charge he is prepared in all necessary preceding branches.

In case of any conflict in the program of studies the higher subject shall give way to the lower unless otherwise ordered by the President.

This College will accept credits from other institutions of equal rank.

To withdraw from any class, a student must present to the instructor the proper withdrawal card signed by the President.

To pursue special work in this institution a student must present reasons in writing for the same to the President for his approval.

No student shall be allowed to register for less than eighteen credit hours, or more than twenty-one, except with the consent of the President and the dean of the school in which the student is registering.

GRADUATION.

In order to graduate in any of the regular college courses, the student must have taken work amounting to eighteen credit hours each semester for four years, the last of which must have been spent in residence at this College. All male students except Juniors, Seniors, and graduate students are required to take, additionally, three hours per week in military science and tactics. Similarly, all young women, except Juniors, Seniors and graduate students are required to take three hours per week of physical education.

Seniors having conditions not removed at the middle of the second semester of the Senior year will not be considered candidates for a degree.

Each candidate for graduation is required to prepare a

thesis, which shall be passed upon by a committee consisting of the head of the department in which the work was done, the professor of English and the President.

Any candidate for graduation may be required by the faculty to give an exercise on commencement day, consisting of an oration or an abstract of his thesis.

Subjects of theses must be presented to the head of the department for approval not later than the end of the first semester of the Senior year.

All theses must be handed in for final inspection at least one week before commencement day, and finished theses must be filed with the Registrar not later than Monday of commencement week.

A thesis in order to be finally accepted must be clearly typewritten on good paper, 8½x11 inches in size, and bound for preservation.

GRADUATE STUDENTS.

The work of graduate students is under the supervision of a committee of three, composed of the President, the chairman of the course of study committee, and the head of the department in which the major work is taken. The chairman of this committee is head of the department concerned.

Regarding graduate courses of study, the following rules must be observed:

(1) The course shall consist of work equivalent to eighteen lecture hours per week, and shall be distributed between one major and one minor.

(2) The major, covering twelve hours, shall be advanced work not offered to undergraduates, in line with the candidate's principal work leading to the B. S. degree, and at least half of it shall be devoted to research whose results shall be embodied in a thesis.

(3) The minor, covering six hours, may be chosen from a line distinct from that of the major, and may include work offered to the undergraduates of the Junior and Senior years.

(4) The candidate must pass a satisfactory examination upon his work and present his thesis for final approval in typewritten form ten days before commencement.

DEGREES.

The degree of *Bachelor of Science (B. S.)* is conferred upon students who satisfactorily complete the work prescribed in any of the collegiate courses of study, but in order to receive the B. S. degree students are required to spend at least one year immediately before graduation in this institution.

The degree of *Master of Science (M. S.)* is conferred upon students of this institution who, after taking the degree of B. S., pursue for at least one year as resident, or for two years as non-resident students, a course of study approved by the committee in charge, pass an examination upon the same, and present a satisfactory thesis. Students of other institutions of similar character and equal rank, holding the bachelor's degree and desiring to take the M. S. degree from this institution, are subject to the same requirements as above, except that they must spend the year next preceding the granting of the degree in resident study.

BUILDINGS AND EQUIPMENT.

The property of the College includes an irrigated experimental farm of about 200 acres, and about an equal amount of unirrigated land. The campus upon which the principal buildings are located, consists of about twenty acres irrigated from a large pumping plant. The buildings include the following:

HADLEY HALL, Administration Building, containing offices of administration, the assembly hall, the library, the de-

partment of household economies, the college book store, and the post office.

WILSON HALL, Agricultural Building, containing class rooms, laboratories, and offices for the departments of agronomy, animal husbandry, horticulture, irrigation engineering, and the Agricultural Experiment Station. The basement contains a well equipped dairy laboratory.

BOYS' DORMITORY, a two-story brick building containing rooms for about sixty boys. The building has modern conveniences, and is under the management of a member of the faculty who rooms in the building. The rooms are well furnished.

SCIENCE HALL, containing the class rooms and laboratories of the departments of chemistry, soil physics and biology.

ENGINEERING BUILDING, a three-story fireproof structure of reinforced concrete, erected in 1913. This building houses the departments of civil, irrigation, mechanical and electrical engineering, and physics.

MECHANICAL ENGINEERING LABORATORIES, two one-story buildings containing a large amount of floor space for the department of mechanical engineering, including the mechanical engineering laboratory, the forge and automobile shops.

Y. M. C. A. BUILDING, erected by private subscription at a cost of \$15,000, occupies a prominent position on the campus and is the center of the religious and much of the social life of the College. The upper floor contains living rooms for eighteen young men, and the rental received helps to defray the expenses of the Association.

McFIE HALL, the dormitory for young women, is located a little apart from the other college buildings, on the avenue which runs through the college farm from the main campus to Mesilla Park. It has all modern conveniences, including

steam heat, electric light, and baths, and will accommodate about fifty people. The college dining hall is located here.

THE GYMNASIUM, erected in 1911, is the center of the athletic activities of the College. The first floor is used for the armory, recitation rooms, locker rooms, dressing rooms, bath rooms, and the office of the department of physical education. The second floor consists of one large room, fifty by eighty feet, with a gallery all around containing a running track.

THE OLD MAIN BUILDING, which was the first building erected on the college campus, was completely destroyed by fire in September, 1910, and this loss creates an urgent need for a new building to supply additional class rooms.

OTHER BUILDINGS. In addition to the principal buildings above mentioned, there are numerous farm buildings: the seed house, green house, a large adobe corral with sheds for stock, feed and implements, a farm building on the horticultural farm, and two pump houses.

EQUIPMENT OF DEPARTMENTS. All the departments are well equipped with apparatus, material, books, and furniture for handling classes in their subjects. The institution pays fire insurance on a valuation of \$143,000 invested in equipment for the various college departments. This does not include the value of buildings and lands.

THE LIBRARY.

One of the most important features of the College is its library, which, supplementing the work of the class or lecture room, is open for reference from eight to five every day except Saturday afternoons and Sundays. Its books circulate among students and faculty with only slight restrictions. Both department and general library books are indexed in the general catalogue, making them all accessible. The library con-

tains a representative collection of general literature; an excellent collection on agriculture and allied subjects; all available matter from the United States Department of Agriculture and the State Experiment Stations, and a large amount from the various State Departments of Agriculture. Much material from foreign countries has been catalogued during the past year, presenting a very complete view of the field of agricultural work at the present time. There are also excellent collections in the departments of botany, chemistry, and mechanical engineering, and the New Mexico material is being added to it as opportunity arises.

The reference room contains a large and up-to-date collection, and encyclopedias, dictionaries and yearbooks are added as published. Many complete sets of bound periodicals, both technical and general, are on file here and are easily accessible by the aid of several indexes. The library has been a government depository since 1908, thus receiving much material of timely interest.

In the reading room there are on file two hundred and seventeen magazines, journals and transactions of learned societies. Seven daily newspapers from various parts of the country are received and twenty-six weeklies from various counties of New Mexico are donated by their publishers.

The library is open from 8 A. M. to 12 M., and from 1 P. M. to 5 P. M., five days of the week, and from 8 A. M. to 12 M. on Saturdays. By making the necessary application to the librarian, books and periodicals may be withdrawn, subject to the following rules:

(1) Encyclopedias and similar works of reference do not circulate.

(2) Current numbers of periodicals may not be kept out of the library longer than over night except during the period from Friday evening to Monday morning. For each day over time a fine of five cents is imposed. The last seven issues of

the dailies, the last two issues of the weeklies, and the last issue of the monthlies are considered current numbers.

(3) Current numbers of periodicals may not be withdrawn sooner than one hour before the library is closed, and must be returned by 9 A. M. of the following day on which the library is opened.

(4) Periodicals other than current numbers are governed by the same rules as library books.

(5) No books or periodicals assigned to any department may be withdrawn without the express consent of the head of that department. A record of loans is kept in each department.

The continued disregard of any of these rules will lead to the withdrawal of the privileges of the library from the offender.

Experiment Station

Experiment Station

EXPERIMENT STATION STAFF.

- GEORGE EDGAR LADD, Ph. D., President of the College.
FABIAN GARCIA, M. S. A., Director and Horticulturist.
LUTHER FOSTER, M. S. A., Animal Husbandman.
DAYTON EUGENE MERRILL, M. S., Biologist.
LOUIS ALLEN HIGLEY, Ph. D., Chemist.
RUPERT LYONEL STEWART, M. S. A., Agronomist.
FREDERICK CONRAD WERKENTHIN, A. M., Assistant Biologist.
JOHN DEALY HUNGERFORD, B. S., Nutrition Chemist.
DEAN WARD BLOODGOOD, B. S., Irrigation Engineer.
JOSE QUINTERO, B. S., Assistant Chemist.
JAMES RILEY MEEKS, B. S. A., Assistant Animal Husbandman.
JOSEPH WHEELER RIGNEY, B. S. A., Assistant Horticulturist.
JAMES THEODORE BARLOW, B. S. A., Assistant Agronomist.
JAMES GUY HAMILTON, B. S. A., Assistant Agronomist.
EDWARD JACKSON MAYNARD, B. S. A., Assistant Animal Husbandman.
ARRA BURTON FITE, B. S. A., Assistant Horticulturist.
ROYAL BURLEIGH THOMPSON, B. S. A., Poultryman.
KENNETH BUSHNELL OGILVIE, B. S., Assistant in Irrigation.
HERBERT G. SMITH, B. S. A., Assistant in Dry-Land Agriculture.
CLARENCE PENDLETON WILSON, M. S., Experiment Secretary and Editor Agricultural Publications.

Experiment Station

The Experiment Station is that part of the institution which devotes its energies primarily to the verification of experimental data elsewhere obtained, with reference to their applicability to New Mexico conditions; to the determination of agricultural facts and principles affecting the agricultural practice in the State; and to the publication and distribution among the people in the State of the experimental and research data obtained from its investigations. The acts creating the Experiment Stations very clearly indicate what their functions should be. The Hatch Act, approved in March, 1887, states that the law was passed

“In order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigations and experiments respecting the principles and applications of agricultural science. * * * * * It shall be the duty and object of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subjected, with remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under the varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and waters; the chemical composition of manures, natural and artificial, with experiments designed to test the comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective States and Territories.”

The Adams Act, approved in 1906, reads as follows:

“For the more complete endowment and maintenance of agricultural experiment stations now established, or which

may hereafter be established in accordance with the act of Congress approved March 2, 1887;" the amounts appropriated "to be applied only to paying the necessary expenses of conducting original researches or experiments bearing directly on the agricultural industry of the United States."

The Station has issued 103 regular bulletins, giving the results of experiments conducted along various agricultural lines; 271 press bulletins, of a popular nature; and a large number of press articles. Copies of such of these as are at present available may be had on application to the Director of the Station.

The agricultural experts employed by the Station are now at work on fifty projects dealing with problems of a practical or scientific nature and pertaining especially to New Mexico conditions. For a detailed statement concerning these, write the Station for a copy of the last annual report of the Director.

While these experts devote a large part of their time to research work, they are also engaged largely in teaching and extension work. Because of their experience with southwestern conditions, their services are more valuable to the students and farmers. Several thousand inquiries concerning matters pertaining to agriculture are answered every year by members of the Experiment Station staff.

During the past year, in addition to the annual report, containing 82 pages, five regular bulletins, with a total of 230 pages; 12 press bulletins, containing 15 pages; and 66 press articles were issued by the Experiment Station. The editions of these various publications contained about 1,300,000 pages of printed matter.

Extension Service

Extension Service

EXTENSION SERVICE STAFF.

GEORGE EDGAR LADD, Ph. D., President of the College.

ABRAHAM C. COOLEY, B. S., Director and County Agent Leader.

CLAUDE IRA DEPUY, Executive Secretary.

CLARENCE PENDLETON WILSON, M. S., Editor.

ONIS LONGBOTTOM, Clerk.

JESSYE EDNA HORNIDY, Stenographer.

WILBUR LESTER ELSE, B. S., Farm Management Demonstrator and Assistant County Agent Leader.

WILLIAM THOMAS CONWAY, B. S., State Agent in Boys' and Girls' Club Work.

JOSEPH HARRISON TOULOUSE, Assistant State Agent in Boys' and Girls' Club Work.

GAIL RICHIE, B. S., State Agent in Home Economics.

ROBERT WOOD LATTA, B. S., State Agent in Dairying.

Specialists.

FABIAN GARCIA, M. S., Horticulturist.

LUTHER FOSTER, M. S., Animal Husbandman.

RUPERT LYONEL STEWART, M. S., Agronomist.

DAYTON EUGENE MERRILL, M. S., Biologist.

ROYAL BURLEIGH THOMPSON, B. S., Poultryman.

County Agriculturists.

ORREN BEATY, B. S., Union County.

HAROLD HEMINGWAY BROOK, Dona Ana County.

EDWARD HEBER DIVELBISS, B. S., Chaves County.

MANRIQUE RODRIGUEZ GONZALEZ, B. S., San Miguel County.

ROLAND HARWELL, Torrance County.

JOHN WILLIAM KNORR, B. S., Eddy County.

VERE LORRAINE MARTINEAU, B. S., Colfax County.

ERASTUS PETERSON, B. S., Curry County.

JUAN MANUEL RAMIREZ, Santa Fe County.

HERBERT CLYDE STEWART, B. S., Bernalillo County.

Extension Service

The Extension Service was organized September 1, 1914, as a result of the Federal Smith-Lever Act approved by Congress May 8, 1914, providing for cooperative Extension Work in agriculture and home economics in the several states taking advantage of it. Since its organization, it has done work in every county of the State. This Service was established for the purpose of disseminating scientific knowledge of agriculture and home economics among the people of the State. Its object is to improve and secure better home conditions, better farm practice, better organization, and better management, to the end of increasing the net farm income, and in general, to make a more profitable, pleasant and attractive country life.

LINES OF EXTENSION WORK.

1. *County Agricultural Agents.* Eleven counties (Bernalillo, Chaves, Colfax, Curry, Dona Ana, San Miguel, Santa Fe, Torrance, Union and Valencia) have taken advantage of the co-operative agreement entered into by the United States Department of Agriculture and the New Mexico College of Agriculture and Mechanic Arts for the establishing of county agents in the agricultural counties of the State, as rapidly as conditions warrant and funds permit. The counties securing the services of a county agricultural agent are asked to appropriate \$1600 per annum towards the support of the work; the balance, which is usually about \$1200 per annum, being provided by the College and the United States Department of Agriculture.

In addition to the money contributed directly by the Col-

lege and United States Department of Agriculture, the county agent is granted the franking privilege, which permits all of his official mail to be carried free of postage. Supervision for the work is also furnished, and a number of specialists, whose duty it is to assist the county agents in solving special problems, conducting demonstrations, meetings, short courses, etc., for the farmers and home makers of their respective counties. Counties niterested can receive more detailed information relative to this work by writing the Extension Director at State College.

2. *Boys' and Girls' Club Work.* Through the State Agent in Club Work, industrial clubs are organized for the boys and girls of the State between the ages of 10 and 18 years. Through these clubs, the boys and girls are taught improved methods in farming and home building; how to grow and market crops; how to raise and manage farm animals and how to eliminate waste on the farm. Lessons are prepared by the State Agent and sent to all club members.

3. *Home Economics.* Home economics clubs and associations are organized for the women of the State by the State Agent in charge of this work, for the study of home problems. Instructions and demonstrations are given in the selection, preservation, preparation and serving of foods; in the use of modern household conveniences and labor saving devices, and in the improvement of sanitary conditions. Neighborhood and community conferences are held to study special problems of local interest.

Study outlines with references are prepared and sent out by the State Agent to all clubs and associations desiring them.

4. *Farm Management Demonstration Work.* In June, 1916, Farm Management Demonstration work was started in New Mexico, in cooperation with the United States Department of Agriculture. The purpose of this work is two-fold: first, to demonstrate to farmers the importance of an efficient

farm organization as a means of increasing the net income of their farms; and secondly, to increase the efficiency of the county agent work.

5. *Dairying.* The State Agent in Dairy Extension Work gives field instructions and demonstrations among the dairy-men of the State along the lines of silo, barn, and milk-house construction; dairy breeding, feeding, herd records, sanitary milk production, organization and marketing. He assists in the location and selection of better dairy stock, and especially in pure bred dairy sires.

6. *Demonstrations.* As far as funds will permit, communities desiring help will be furnished with competent speakers to give lectures and demonstrations dealing with the various lines of agriculture and home making, such as pruning, spraying, stock judging, the canning of fruits and vegetables, sanitation, labor saving devices, etc.

7. *Short Courses.* Two and three day short courses will be conducted in communities throughout the State wherever there is a demand for them. Communities desiring such a short course must accompany their application with a petition signed by 50 farmers and 25 home makers, who guarantee their attendance at these meetings each day. In addition, it is expected that the community will make all necessary arrangements, attend to all advertising, and bear all local expense, including the living expenses while in the community, of the speakers furnished by the College.

Communities wishing such courses should send in their applications as early as possible, in order that satisfactory dates may be arranged.

8. *Farmers' and Home Makers' Week.* Each year during the second week in January, there is held at the College, a Farmers' Week and Home Makers' Conference. Practical lectures and demonstrations dealing with almost every line of agriculture and home economics are given by men and woman,

both from the College and from outside of the State, who have had excellent training and wide experience in their respective lines.

9. *Fairs.* As far as possible, county and community fairs will be furnished with competent judges, provided the local fair association guarantees to pay the living and traveling expenses of these judges. In order that these fairs may have a greater educational value to their respective localities, the judges will be glad to cooperate with the fair associations in arranging and giving demonstrations in connection with the fairs. They will explain the methods and reasons of awards, and will give advice on what and how to exhibit, preparation of products for market, and instruction in various lines of agriculture and home building.

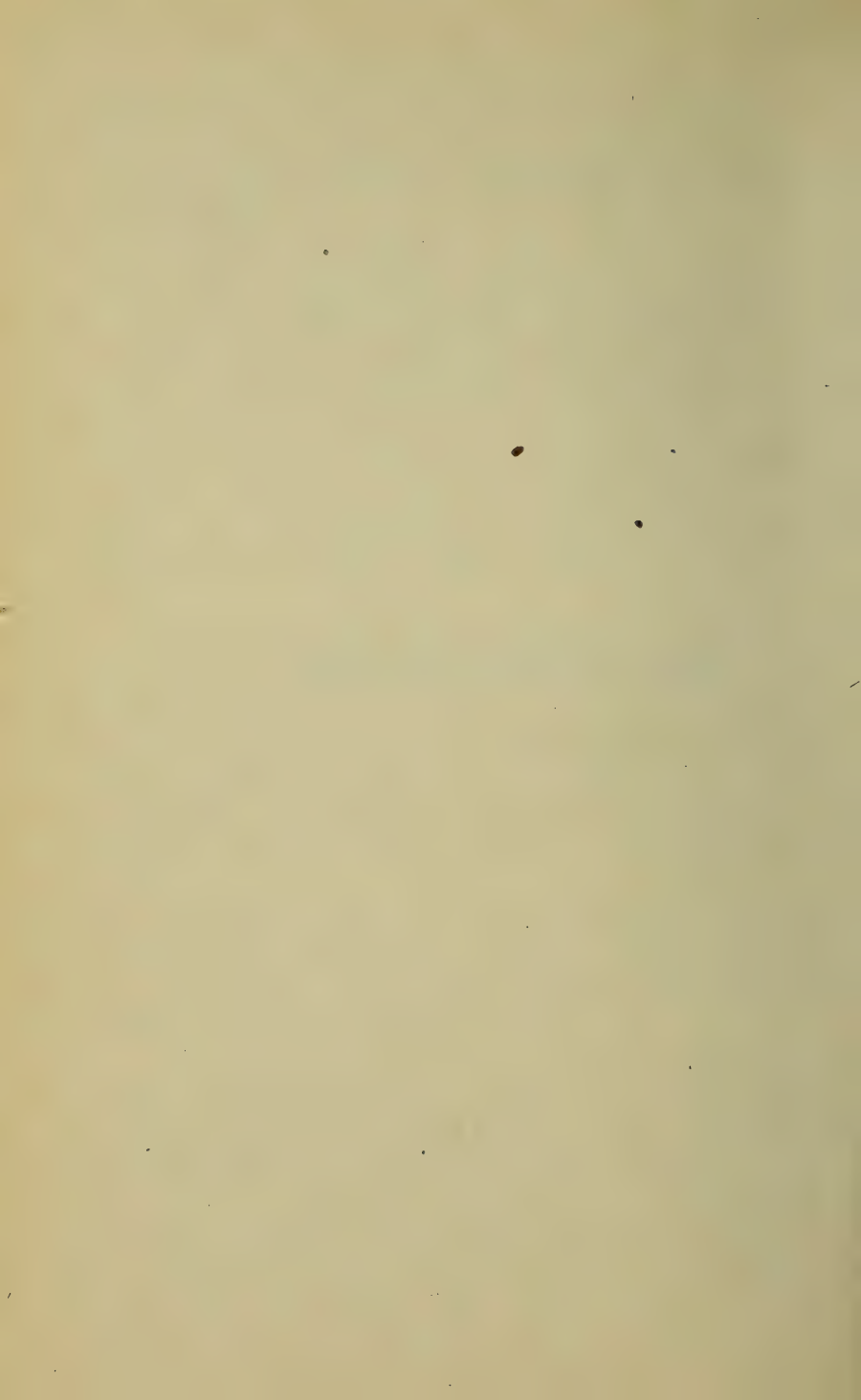
10. *Publications and Correspondence.* In addition to the bulletins published by the Experiment Station, the Extension Service publishes a number of popular bulletins and circulars dealing with the various phases of agriculture and home economics, among which is the New Mexico Farm Courier, a monthly publication with a large circulation. In it appears, each month, timely articles on agriculture and home economics of local interest to the farmers and home makers of the State.

These publications, as well as those of the Experiment Station, may be had free of charge by any one desiring them.

At all times, the Extension Service is ready and willing to give information through correspondence.

11. *Information.* Further information relative to any line of Extension Work may be had by addressing the Extension Director of the New Mexico College of Agriculture and Mechanic Arts, State College, New Mexico.

Instructional Service



Instructional Service

The instructional service involves the greater part of the work carried on at the College. It embraces the college, preparatory, industrial, and trades courses. The College proper comprises the School of Agriculture, the School of Engineering, and the School of General Science. The department of household economics, although it offers a more or less independent course of instruction, is regarded as a part of the School of Agriculture. Further information concerning the individual departments is given under the separate schools.

SCHEDULE AND OUTLINE OF COURSES OF INSTRUCTION.

The outlines of the courses of instruction on the following pages are offered as suggestive of the general scope of the several lines of work and study open to election. The numbers preceding the several subjects refer to the description of the latter in the body of the catalog. Numbers following the subjects indicate the time and credit allotted to each of them, laboratory periods being marked P, two of which count as one credit hour.

Outline of Course in Agriculture

FRESHMAN.

First Semester.

Eng. 11. Rhetoric and Composition, 3.
Chem. 11. General Chemistry, 3+3P.
Biol. 11. General Botany, 2+3P.
A. H. 1. Types of Live Stock, 1+3P.
Phys. 13. Agricultural Physics, 2+2P.
Agron. 7. Seeds, 3P.

Second Semester.

Eng. 12. Rhetoric and Composition, 3.
Chem. 12. General Chemistry, 3+3P.
Biol. 12. General Botany, 2+3P.
A. H. 2. Types of Live Stock, 2+2P.
Hort. 2. Plant Propagation, 1+3P.
M. E. 32. Farm Motors, 2+3P.

SOPHOMORE.

Chem. 13. Organic Chemistry, 4.
A. H. 11. Farm Dairying, 2+3P.
Agron. 11. Field Crops, 3.
Biol. 13. General Zoology, 2+3P.
C. E. 1, 3. Plane Surveying and Field Practice, 2+4P.
Hort. 3. Floriculture and Landscape Gardening, 1+2P.

Chem. 18. Agricultural Chemistry, 2+6P.
Biol. 16. Bacteriology, 2+3P.
Agron. 12. Field Crops, 3.
Biol. 14. Physiology, 3+2P.
Agron. 20. Field Machinery, 1+3P.
Hort. 4. Vegetable Gardening, 3.

JUNIOR.

Agron. 13. Soil Physics, 2+3P.
Hort. 5. Fruit Growing, 3.
A. H. 7. Stock Feeding, 3.
Biol. 17. Introductory Entomology 2+2P.

Electives:

Biol. 19. Plant Histology, 1+3P.
Hort. 7. Forestry, 2+2P.
A. H. 3. Live Stock Management, 2+2P.
Agron. 1. Grain Judging, 3P.
Eng. 13. Advanced English Composition, 3.

Agron. 14. Soil Fertility, 2+3P.
A. H. 6. Veterinary Science, 3.
I. E. 4. Principles of Irrigation, 3.
Biol. 18. Applied Entomology, 1+3P.

Electives:

Biol. 20. Plant Pathology, 2+3P.
Hort. 6. Viticulture and Nut Culture, 2.
A. H. 4. Stock Judging, 2+3P.
A. H. 12. Dairy Manufactures, 3+3P.
Agron. 8. Principles of Dry Farming, 2.
Eng. 14. Advanced English Composition, 3.

SENIOR.

Geol. 11. General Geology, 4.
Agron. 3. Farm Management, 2+2P.
Econ. 11. Economics, 3.

Electives:

Hort. 17. Plant Breeding, 3.
Hort. 9. Pomology, 3.
Hort. 11. Systematic Pomology, 2P.
Hort. 15. Canning, 4P.
Hort. 13. Packing, 2P.
Agron. 9. Experimental Agronomy, 3P.
Agron. 17. Agronomy Seminar, 1.
Agron. 5. Advanced Farm Management, 4P.
A. H. 5. Stock Judging, 2+3P.

Sociol. 2. Sociology, 2.
Agron. 4. Farm Management, 2+2P.
Thesis, 5.

Electives:

A. H. 8. Animal Breeding, 3.
Hort. 8. Olericulture, 1+3P.
Hort. 12. Pomology Seminar, 2.
Hort. 14. Pruning, 1+2P.
A. H. 10. Herd Books, 2+2P.
I. E. 14. Irrigation Institutions, 2.
Agron. 18. Agronomy Seminar, 1.
Agron. 6. Advanced Farm Management, 4P.

Electives must be approved by the head of the department.

Outline of Course in Household Economics

FRESHMAN.

First Semester.

Eng. 11. Rhetoric and Composition, 3.
 Chem. 11. General Chemistry, 3+3P.
 Biol. 11. General Botany, 2+3P.
 Fr. 1. French, 4 or Sp. 1. Spanish, 4.
 H. E. 1. Sewing I, 2+4P.
 Hort. 1. Gardening, 1+2P.

Second Semester.

Eng. 12. Rhetoric and Composition, 3.
 Chem. 12. General Chemistry, 3+3P.
 Biol. 12. General Botany, 2+3P.
 Fr. 2. French, 4 or Sp. 2. Spanish, 4.
 H. E. 10. Foods I, 2+4P.
 A. H. 16. Dairying and Farm Poultry, 1+2P.

SOPHOMORE.

Chem. 33. Household Chemistry, 3+2P.
 Biol. 13. General Zoology, 2+3P.
 Fr. 3. French, 3 or Sp. 3. Spanish, 3.
 H. E. 11. Foods II, 2+4P.
 Eng. 13. Advanced English Composition, 3.

Chem. 34. Household Chemistry, 3+2P.
 Biol. 14. Physiology, 3+2P.
 Fr. 4. French, 3 or Sp. 4. Spanish, 3.
 H. E. 2. Sewing II, 2+4P.
 Biol. 15. Bacteriology, 2+3P.

JUNIOR.

Econ. 11. Economics, 3.
 Hist. 11. Modern Europe, 3.
 Eng. 15. English Poets of the 19th Century, or Eng. 17 Shakespeare, 3.
 H. E. 13. Foods III, 2+3P.
 H. E. 3. Dressmaking and Tailoring, 6P.

Sociol. 2. Sociology, 2.
 Hist. 12. Modern Europe, 3.
 Eng. 16. English Poets of the 19th Century, or Eng. 18 Shakespeare, 3.
 H. E. 14. Dietetics, 2+3P.
 H. E. 4. Millinery, 6P.
 Phys. 14. Household Physics, 2+2P.

SENIOR.

Psych. 11. General Psychology, 4.
 Hist. 13. American History, 3.
 Geol. 11. General Geology, 4.
 H. E. 15. Household Management, 3.
 H. E. 5. House Decoration, 1+4P.

Ped. 2. Rural Education, 4.
 Hist. 14. American History, 3.
 Thesis, 5.
 H. E. 16. Home Nursing, 2+2P.
 H. E. 6. Textiles, 1+4P.

Outline of Course in Civil Engineering

FRESHMAN.

First Semester.

Eng. 11. Rhetoric and Composition, 3.
 Math. 11. College Algebra, 2.
 Math. 13. Plane Trigonometry, 3.
 Fr. 1. French, 4 or Sp. 1. Spanish, 4.
 Chem. 11. General Chemistry, 3+3P.
 M. E. 1. Engineering Drawing, 4P.
 M. E. 35. Woodwork, 4P.

Second Semester.

Eng. 12. Rhetoric and Composition, 3.
 Math. 12. College Algebra, 2.
 Math. 14. Plane Geometry, 3.
 Fr. 2. French, 4 or Sp. 2. Spanish, 4.
 Chem. 12. General Chemistry, 3+3P.
 M. E. 2. Engineering Drawing, 4P.
 M. E. 36. Pattern Making and Foundry Practice, 4P.

SOPHOMORE.

Math. 15. Solid Analytic Geometry, 1.
 Math. 19. Calculus, 4.
 Phys. 11. Physics, 3+4P.
 M. E. 3. Descriptive Geometry, 4P.
 C. E. 1. Plane Surveying, 2.
 C. E. 3. Field Practice, 4P.
 M. E. 37. Machine Shop and Forging, 4P.

Math. 20. Calculus, 4.
 Phys. 12. Physics, 3+4P.
 M. E. 10. Applied Statics, 3.
 C. E. 4. Advanced Surveying, 2.
 C. E. 6. Field and Office Practice, 8P.

JUNIOR.

Econ. 11. Economics, 3.
 M. E. 11. Strength of Materials, 4.
 C. E. 11. Graphic Statics, 4P.
 E. E. 1. Elements of Electrical Engineering, 4.
 C. E. 7. Railway and Canal Survey, 3.
 C. E. 9. Railway and Canal Field and Office Practice, 4P.

Sociol. 2. Sociology, 2.
 M. E. 12. Applied Dynamics, 2.
 I. E. 2. Hydraulics, 3.
 E. E. 20. Electrical Engineering Laboratory, 4P.
 M. E. 14. Elements of Power Engineering, 3.
 C. E. 12. Bridge Stresses, 2.
 C. E. 14. Framed Structures, 4P.

SENIOR.

C. E. 15. Bridge Design, 6P.
 I. E. 7. Water Power Engineering, 3.
 C. E. 19. Reinforced Concrete and Masonry, 3.
 C. E. 23. Materials of Construction, 1.
 C. E. 21. Materials Laboratory, 4P.
 M. E. 27. Mechanical Engineering Laboratory, 4P.
 Geol. 11. General Geology, 4.

C. E. 16. Bridge Design, 6P.
 I. E. 10. Public Water Supply, 3.
 C. E. 22. Contracts and Specifications, 2.
 M. E. 30. Seminar, 1.
 C. E. 20. Sewage, 2.
 C. E. 18. Highway Engineering, 3.
 Thesis, 4.

Outline of Course in Electrical Engineering

FRESHMAN.

First Semester.

Eng. 11. Rhetoric and Composition, 3.
 Math. 11. College Algebra, 2.
 Math. 13. Plane Trigonometry, 3.
 Fr. 1. French 4 or Sp. 1. Spanish, 4.
 Chem. 11. General Chemistry, 3+3P.
 M. E. 1. Engineering Drawing, 4P.
 M. E. 35. Woodwork, 4P.

Second Semester.

Eng. 12. Rhetoric and Composition, 3.
 Math. 12. College Algebra, 2.
 Math. 14. Plane Analytic Geometry, 3.
 Fr. 2. French, 4 or Sp. 2. Spanish, 4.
 Chem. 12. General Chemistry, 3+3P.
 M. E. 2. Engineering Drawing, 4P.
 M. E. 36. Pattern Making and Foundry Practice, 4P.

SOPHOMORE.

Math. 15. Solid Analytic Geometry, 1.
 Math. 19. Calculus, 4.
 Phys. 11. Physics, 3+4P.
 M. E. 3. Descriptive Geometry, 4P.
 M. E. 37. Machine Shop and Forging, 4P.
 C. E. 1. Plane Surveying, 2.
 C. E. 3. Field Practice, 4P.

Math. 20. Calculus, 4.
 Phys. 12. Physics, 3+4P.
 M. E. 10. Applied Statics, 3.
 M. E. 38. Machine Shop and Forging, 4P.
 M. E. 4. Machine Drawing, 4P.
 M. E. 14. Elements of Power Engineering, 3.

JUNIOR.

Econ. 11. Economics, 3.
 M. E. 11. Strength of Materials, 4.
 C. E. 11. Graphic Statics, 4P.
 E. E. 1. Elements of Electrical Engineering, 4.
 M. E. 15. Mechanism, 3.

Sociol. 2. Sociology, 2.
 M. E. 12. Applied Dynamics, 2.
 I. E. 2. Hydraulics, 3.
 E. E. 20. Electrical Engineering Laboratory, 4P.
 M. E. 26. Mechanical Engineering Laboratory, 4P.
 M. E. 6. Machine Design, 4P.
 M. E. 16. Thermodynamics, 3.
 E. E. 2. Dynamo Electric Machinery, 2.

SENIOR.

M. E. 17. Refrigeration and Heat Engines, 6P.
 E. E. 3. Alternating Current Theory, 4.
 E. E. 21. Electrical Engineering Laboratory, 4P.
 M. E. 27. Mechanical Engineering Laboratory, 4P.
 C. E. 23. Materials of Construction, 1.
 C. E. 21. Materials Laboratory, 4P.
 E. E. 7. Electrical Engineering Design, 1+4P.

M. E. 18. Power Plant Engineering, 6P.
 E. E. 4. Alternating Current Theory, 3.
 E. E. 22. Electrical Engineering Laboratory, 4P.
 M. E. 30. Seminar, 1.
 E. E. 6. Electrical Power Transmission, 3.
 Thesis, 4.
 Elective, 2.

Electives must be approved by the head of the department.

Outline of Course in Irrigation Engineering

FRESHMAN.

First Semester.

Eng. 11. Rhetoric and Composition, 3.
 Math. 11. College Algebra, 2.
 Math. 13. Plane Trigonometry, 3.
 Fr. 1. French, 4 or Sp. 1. Spanish 4.
 Chem. 11. General Chemistry, 3+3P.
 M. E. 1. Engineering Drawing 4P.
 M. E. 35. Woodwork, 4P.

Second Semester.

Eng. 12. Rhetoric and Composition, 3.
 Math. 12. College Algebra, 2.
 Math. 14. Plane Analytic Geometry, 3.
 Fr. 2. French 4 or Sp. 2. Spanish, 4.
 Chem. 12. General Chemistry, 3+3P.
 M. E. 2. Engineering Drawing, 4P.
 M. E. 36. Pattern Making and Foundry Practice, 4P.

SOPHOMORE.

Math. 15. Solid Analytic Geometry, 1.
 Math. 19. Calculus, 4.
 Phys. 11. Physics, 3+4P.
 M. E. 3. Descriptive Geometry, 4P.
 C. E. 1. Plane Surveying, 2.
 C. E. 3. Field Practice, 4P.
 M. E. 37. Machine Shop and Forging, 4P.

Math. 20. Calculus, 4.
 Phys. 12. Physics, 3+4P.
 M. E. 10. Applied Statics, 3.
 C. E. 4. Advanced Surveying, 2.
 C. E. 6. Field and Office Practice, 8P.

JUNIOR.

Econ. 11. Economics, 3.
 M. E. 11. Strength of Materials, 4.
 C. E. 11. Graphic Statics, 4P.
 E. E. 1. Elements of Electrical Engineering, 4.
 C. E. 7. Railway and Canal Survey, 3.
 C. E. 9. Railway and Canal Field and Office Practice, 4P.
 Agron. 13. Soil Physics, 2.

Sociol. 2. Sociology, 2.
 M. E. 12. Applied Dynamics, 2.
 I. E. 2. Hydraulics, 3.
 E. E. 20. Electrical Engineering Laboratory, 4P.
 M. E. 14. Elements of Power Engineering, 3.
 I. E. 4. Principles of Irrigation, 3.
 Agron. 14. Soil Fertility, 2.

SENIOR.

I. E. 5. Irrigation Engineering, 4.
 I. E. 7. Water Power Engineering, 3.
 I. E. 9. Drainage, 2.
 C. E. 19. Reinforced Concrete and Masonry, 3.
 C. E. 21. Materials Laboratory, 4P.
 C. E. 23. Materials of Construction, 1.
 M. E. 27. Mechanical Engineering Laboratory, 4P.

I. E. 10. Public Water Supply, 3.
 I. E. 12. Irrigation Design, 8P.
 I. E. 14. Irrigation Institutions, 2.
 M. E. 30. Seminar, 1.
 Thesis, 4.
 Elective, 2.

Electives must be approved by the head of the department.

Outline of Course in Mechanical Engineering

FRESHMAN.

First Semester.

Eng. 11. Rhetoric and Composition, 3.
 Math. 11. College Algebra, 2.
 Math. 13. Plane Trigonometry, 3.
 Fr. 1. French, 4 or Sp. 1. Spanish 4.
 Chem. 11. General Chemistry, 3+3P.
 M. E. 1. Engineering Drawing, 4P.
 M. E. 35. Woodwork, 4P.

Second Semester.

Eng. 12. Rhetoric and Composition, 3.
 Math. 12. College Algebra, 2.
 Math. 14. Plane Analytic Geometry, 3.
 Fr. 2. French 4 or Sp. 2. Spanish 4.
 Chem. 12. General Chemistry, 3+3P.
 M. E. 2. Engineering Drawing, 4P.
 M. E. 36. Pattern Making and Foundry Practice, 4P.

SOPHOMORE.

Math. 15. Solid Analytic Geometry, 1.
 Math. 19. Calculus, 4.
 Phys. 11. Physics, 3+4P.
 M. E. 3. Descriptive Geometry, 4P.
 M. E. 37. Machine Shop and Forging, 4P.
 C. E. 3. Field Practice, 4P.
 C. E. 1. Plane Surveying, 2.

Math. 20. Calculus, 4.
 Phys. 12. Physics, 3+4P.
 M. E. 10. Applied Statics, 3.
 M. E. 38. Machine Shop and Forging, 4P.
 M. E. 4. Machine Drawing, 4P.
 M. E. 14. Elements of Power Engineering, 3.

JUNIOR.

Econ. 11. Economics, 3.
 M. E. 11. Strength of Materials, 4.
 C. E. 11. Graphic Statics, 4P.
 E. E. 1. Elements of Electrical Engineering, 4.
 M. E. 15. Mechanism, 3.

Sociol. 2. Sociology, 2.
 M. E. 12. Applied Dynamics, 2.
 I. E. 2. Hydraulics, 3.
 E. E. 20. Electrical Engineering, Laboratory, 4P.
 M. E. 26. Mechanical Engineering Laboratory, 4P.
 M. E. 6. Machine Design, 4P.
 M. E. 16. Thermodynamics, 3.
 E. E. 2. Dynamo Electric Machinery, 2.

SENIOR.

M. E. 17. Refrigeration and Heat Engines, 6P.
 M. E. 27. Mechanical Engineering Laboratory, 4P.
 M. E. 7. Machine Design, 4P.
 M. E. 23. Heating and Ventilating, 3.
 C. E. 23. Materials of Construction, 1.
 C. E. 21. Materials Laboratory, 4P.
 M. E. 39. Shop Methods, 2.
 Chem. 23. Metallurgy, 3.

M. E. 18. Power Plant Engineering, 6P.
 M. E. 28. Mechanical Engineering Laboratory, 4P.
 M. E. 8. Machine Design, 4P.
 M. E. 24. Shop Organization, 3.
 M. E. 30. Seminar, 1.
 Thesis, 4.
 Elective, 2.

Electives must be approved by the head of the department.

Outline of Course in General Science

FRESHMAN.

First Semester.

Eng. 11. Rhetoric and Composition, 3.
 Math. 11. College Algebra, 2.
 Math. 13. Plane Trigonometry, 3.
 Chem. 11. General Chemistry, 3+3P.
 Biol. 11. General Botany, 2+3P.
 Fr. 1. French, 4 or Sp. 1. Spanish, 4.

Second Semester.

Eng. 12. Rhetoric and Composition, 3.
 Math. 12. College Algebra, 2.
 Math. 14. Analytic Geometry, 3.
 Chem. 12. General Chemistry, 3+3P.
 Biol. 12. General Botany, 2+3P.
 Fr. 2. French, 4 or Sp. 2. Spanish, 4.

SOPHOMORE.

Eng. 13. Advanced English Composition, 3.
 Chem. 13. Organic Chemistry, 4.
 Biol. 13. General Zoology, 2+3P.
 Phys. 11. Physics, 3+4P.
 Fr. 3. French, 3 or Sp. 3. Spanish, 3.

Eng. 14. Advanced English Composition, 3.
 Chem. 14. Organic Chemistry, 2+4P.
 Biol. 14. Physiology, 3+2P.
 Phys. 12. Physics, 3+4P.
 Fr. 4. French, 3 or Sp. 4. Spanish, 3.

JUNIOR.

Econ. 11. Economics, 3.
 Hist. 11. Modern Europe, 3.
 Eng. 15. English Poets of the 19th Century, 3 or Eng. 17. Shakespeare, 3.
 Astron. 11. General Astronomy, 2+1P.
 Elective, 7.

Econ. 12. Economic Problems, 2.
 Hist. 12. Modern Europe, 3.
 Eng. 16. English Poets of the 19th Century, 3 or Eng. 18. Shakespeare, 3.
 Astron. 12. General Astronomy, 2+1P.
 Sociol. 2. Sociology, 2.
 Elective, 6.

SENIOR.

Geol. 11. General Geology, 4.
 Hist. 13. American History, 3.
 Psych. 11. General Psychology, 4.
 Elective, 7.

Geol. 12. Historical Geology, 4.
 Hist. 14. American History, 3.
 Thesis, 5.
 Elective, 6.

NOTE.—For the B. S. degree, students will be expected to elect in the Junior and Senior years, so far as practicable, consecutive courses in physicochemical, biological or social science.

Outline of College Preparatory Course

FIRST YEAR.

First Semester.

Eng. 1. First Year Preparatory English, 5.
 Math. 1. Elementary Algebra, 5.
 Geol. 1. Physiography, 3+3P.
One Elective:
 Lat. 1. Elementary Latin, 5.
 M. E. 33. Free-hand Drawing, 3P.
 M. E. 41. Manual Training, 6P.

Second Semester.

Eng. 2. First Year Preparatory English, 5.
 Math. 2. Elementary Algebra, 5.
 Geol. 2. Physiography, 3+3P.
One Elective:
 Lat. 2. Elementary Latin, 5.
 M. E. 34. Mechanical Drawing, 3P.
 M. E. 42. Manual Training, 6P.

SECOND YEAR.

Eng. 3. Second Year Preparatory English, 5.
 Hist. 1. General History, 5.
Two Electives:
 Lat. 1. Elementary Latin, 5.
 Biol. 1. Elementary Zoology, 3+3P.
 Math. 3. Plane Geometry, 5.
 B. E. 7. Business Arithmetic, 5.

Eng. 4. Second Year Preparatory English, 5.
 Hist. 2. General History, 5.
Two Electives:
 Lat. 2. Elementary Latin, 5.
 Biol. 2. Elementary Botany, 3+3P.
 Math. 4. Plane Geometry, 5.
 B. E. 8. Industrial Geography, 5.

THIRD YEAR.

Eng. 5. Third Year Preparatory English, 5.
 Hist. 3. American History, 5.

Two Electives:

(A)
 Sp. 1. Elements of Spanish, 4.
 Math. 5. Solid Geometry, 5.
 B. E. 7. Business Arithmetic, 5.
 B. E. 1. Typewriting, 5P or 10P.
 B. E. 3. Stenography, 5.

(B)
 A. H. 1. Types of Live Stock, 1+3P.
 M. E. 31. Farm Motors, 2+3P.
 H. E. 1. Sewing 1, 2+3P.
 M. E. 1. Engineering Drawing, 4P.
 M. E. 35. Woodwork, 4P.
 M. E. 37. Machine Shop and Forging, 4P.
 M. E. 43. Automobile and Gas Engine Practice, 12P.

Eng. 6. Third Year Preparatory English, 5.
 Hist. 4. American Government, 5.

Two Electives:

(A)
 Sp. 2. Elements of Spanish, 4.
 Math. 6. Advanced Algebra, 5.
 B. E. 8. Industrial Geography, 5.
 B. E. 2. Typewriting, 5P or 10P.
 B. E. 4. Stenography, 5.

(B)
 A. H. 2. Types of Live Stock, 2+2P.
 Hort. 2. Plant Propagation, 1+3P.
 H. E. 10. Foods I, 2+4P.
 M. E. 2. Engineering Drawing, 4P.
 M. E. 36. Pattern Making and Foundry Practice, 4P.
 M. E. 38. Machine Shop and Forging, 4P.
 M. E. 44. Automobile and Gas Engine Practice, 12P.

Outline of College Preparatory Course—*Cont.*

SENIOR.

Eng. 7. Fourth Year Preparatory English, 5.

Two or Three Electives:

(A)

- Sp. 3. Spanish Readings, 3.
 Phys. 1. Elementary Physics, 3+3P.
 Chem. 1. Elementary Chemistry, 4+2P.
 Math. 7. Higher Arithmetic, 5.
 B. E. 1. Typewriting, 5P or 10P.
 B. E. 3. Stenography, 5.
 Econ. 1. Elementary Economics, 4

(B)

- Agron. 11. Field Crops, 3.
 A. H. 11. Farm Dairying, 2+3P.
 Hort. 3. Floriculture and Landscape Gardening, 1+2P.
 Hort. 1. Gardening, 1+2P.
 H. E. 11. Foods II, 2+4P.
 M. E. 1. Engineering Drawing, 4P.
 M. E. 35. Woodwork, 4P.
 M. E. 37. Machine Shop and Forging, 4P.
 M. E. 43. Automobile and Gas Engine Practice, 12P.

Eng. 8. Fourth Year Preparatory English, 5.

Two or Three Electives:

(A)

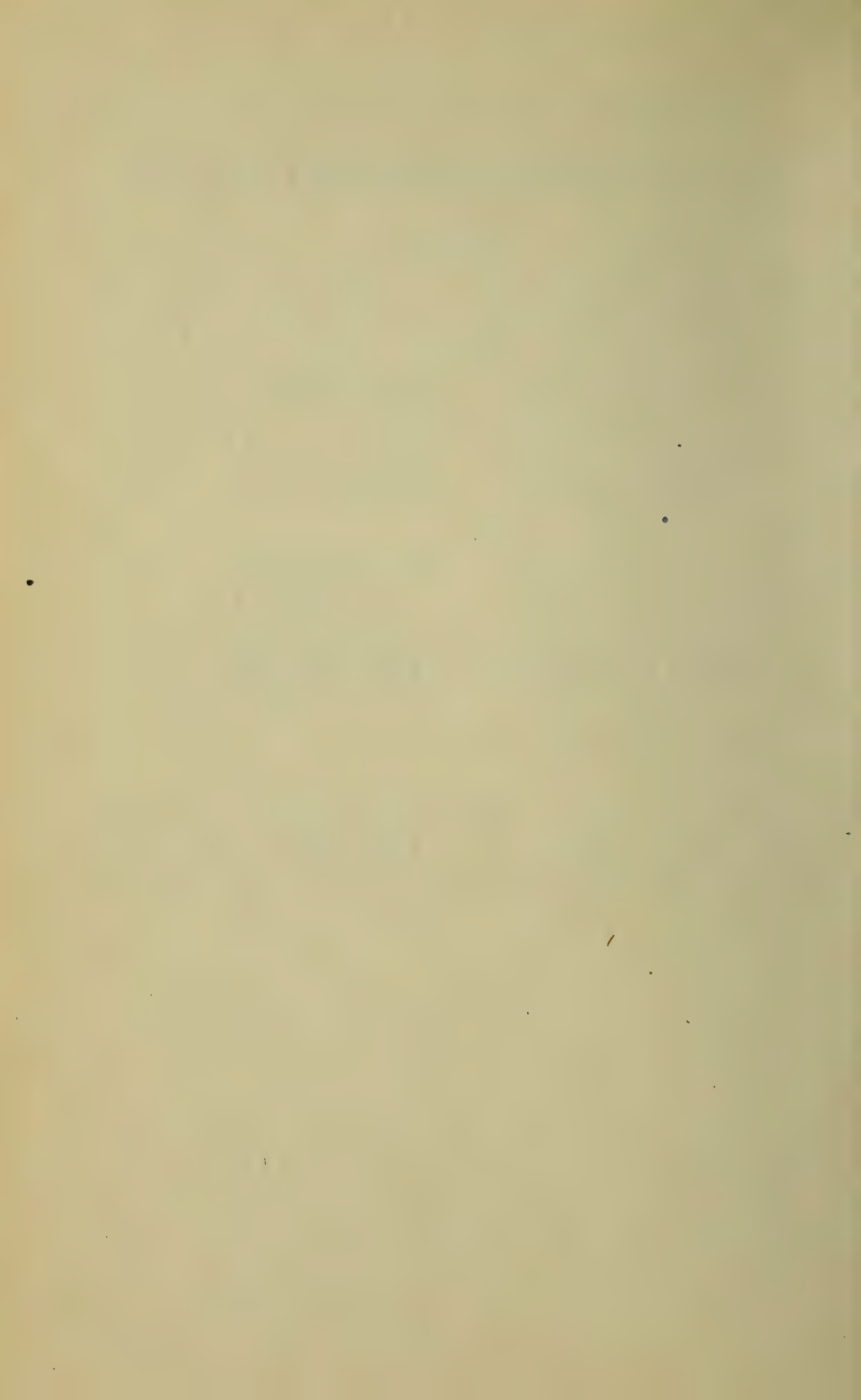
- Sp. 4. Spanish Readings, 3.
 Phys. 2. Elementary Physics, 3+3P.
 Chem. 2. Elementary Chemistry, 4+2P.
 Math. 6. Advanced Algebra, 5.
 B. E. 2. Typewriting, 5P or 10P.
 B. E. 4. Stenography, 5.
 B. E. 10. Business Law, 4.
 Ped. 2. Rural Education, 4.

(B)

- Agron. 12. Field Crops, 3.
 Agron. 20. Field Machinery, 1+3P.
 Hort. 4. Vegetable Gardening, 3.
 A. H. 16. Farm Poultry and Dairying, 1+2P.
 H. E. 2. Sewing II, 2+4P.
 M. E. 2. Engineering Drawing, 4P.
 M. E. 36. Pattern Making and Foundry Practice, 4P.
 M. E. 38. Machine Shop and Forging, 4P.
 M. E. 4. Machine Drawing, 4P.
 M. E. 44. Automobile and Gas Engine Practice, 12P.

NOTE.—Electives must be approved by the head of the preparatory department. Students preparing for college must elect plane geometry; and for entrance to courses in general science or engineering, they must elect solid geometry and advanced algebra. For entrance to college courses in household economics they must elect elementary chemistry. The electives in agriculture and household economics are offered especially to those who do not expect to enter college; they will not be credited for college entrance to courses in agriculture and household economics.

The School of Agriculture



The School of Agriculture

FACULTY.

GEORGE EDGAR LADD, Ph. D., President of the College.

RUPERT LYONEL STEWART, M. S., Acting Dean of Agriculture and Professor of Agronomy.

FABIAN GARCIA, M. S., Professor of Horticulture.

LUTHER FOSTER, M. S. A., Professor of Animal Husbandry.

PEARL CHERRY MILLER, B. S., Professor of Household Economics.

LOUIS ALLEN HIGLEY, Ph. D., Professor of Chemistry.

DAYTON EUGENE MERRILL, M. S., Professor of Entomology.

FREDERICK CONRAD WERKENTHIN, A. M., Instructor in Botany.

JOSEPH WHEELER RIGNEY, B. S., Instructor in Horticulture.

JAMES RILEY MEEKS, B. S., Instructor in Dairying.

JAMES THEODORE BARLOW, B. S., Instructor in Agronomy.

ARRA BURTON FITE, B. S., Instructor in Horticulture.

JAMES GUY HAMILTON, B. S., Instructor in Agronomy and Farm Superintendent.

EDWARD JACKSON MAYNARD, B. S., Instructor in Animal Husbandry.

ARNOLD ZANE SMITH, B. S., Instructor in Agronomy.

ROYAL BURLEIGH THOMPSON, B. S., Instructor in Animal Husbandry.

HELEN IDA THISSELL, Instructor in Domestic Art.

The School of Agriculture

The School of Agriculture embraces the following departments of instruction:

- I. Department of Agronomy and Soil Physics.
- II. Department of Animal Husbandry, including Poultry and Dairying.
- III. Department of Horticulture, including Landscape Gardening and Floriculture.
- IV. Department of Household Economics.

The courses of study offered under these several departments are designed to combine, in the proper proportion, that amount of theoretical study with laboratory and field training which will produce a well rounded, practical, resourceful man.

To this end the courses are strong in botany and chemistry, which form important aids to applied agriculture, and a certain number of other subjects of general educational value are included. To all this is added a large amount of practical work under competent instruction and with a modern equipment. The instruction is given by text-books, lectures, laboratory practice, and field observation. These courses fit the young man for the various agricultural pursuits: *farming, stock raising, dairying, fruit growing, market gardening, and the nursery business.* They also prepare him for professional positions in agricultural colleges, for service in the United States Department of Agriculture, and for farm management and supervision. The demand for trained men in these latter positions has been so great that in recent years almost all agricultural graduates have been called into college or experiment station work.

A new and important field of opportunity for young men trained in agriculture has been opened through the passage by Congress of the Smith-Lever bill for agricultural extension work and its acceptance by the various States of the Union. Within a short time millions of dollars will be spent annually in carrying scientific agricultural knowledge to the farmers, in organizing the farmers and farmers' wives for better conditions of rural life, and improving marketing conditions. The State of New Mexico has now in its employ a large number of agricultural experts, at salaries ranging from \$1,500 to \$2,500 per year, and all traveling expenses paid. This opportunity is not alone for men, but also for women.

In the field of teaching both for men and women there is a constantly increasing demand for those who have had training in agricultural and farm problems. There is also a constantly increasing demand for young women teachers who have been trained in household economy.

DEPARTMENT OF AGRONOMY.

PROFESSOR STEWART

MR. BARLOW

MR. SMITH

MR. HAMILTON

Agronomy is the science of the field and its crops. The object of the work is to acquaint the student with soils, crops, crop production, machinery of crop production, the improvement of soils, the preservation of fertility, and the application of economic business methods.

Agron. 1. *Grain Judging.* A laboratory course in judging various crops with regard to market grades and to seed. The score card is used extensively. Mr. Smith.

Required of Juniors specializing in Agronomy, and elective for other students in Agriculture prepared to take the work, first semester, 3 hours practice.

Agron. 3. *Farm Management.* The work of this course consists of a study of some of the problems confronting a farmer in the development and management of different classes of farms. It treats of the location and grouping of farm buildings; utilization of the different soils and exposures; rotation and maintenance of soil fertility; provision for the necessary livestock, which includes a proper division between tilled and untilled land, meadow, pasture, etc.; and the development of the landscape effects of the entire farm. It correlates the study of soil management, crop management and business management of the farm, including farm accounts. Professor Stewart.

Required of Seniors in Agriculture, first semester, 2 hours plus 2 hours practice.

Agron. 4. *Farm Management.* Continuation of Agron. 3. Professor Stewart.

Required of Seniors in Agriculture, second semester, 2 hours plus 2 hours practice. Prerequisite, Agron. 3.

Agron. 5, 6. *Advanced Farm Management*. This course affords an opportunity for those who have taken Agron. 3 and 4 to pursue the subject further. Farm labor income and efficiency factors will be given special attention. Professor Stewart.

Elective for Seniors in Agriculture, first and second semester, 4 hours practice.

Agron. 7. *Seeds*. In this course studies of the identification, adulteration, and germination of farm seeds are taken up. A systematic study of seeds of the more common weeds is made, so that adulterants may be recognized and classified. Methods of selection and preservation of seeds are studied, and methods of treating seeds for fungus and other enemies. Mr. Smith.

Required of Freshmen in Agriculture prepared to take the work, first semester, 3 hours practice.

Agron. 8. *Principles of Dry Farming*. This course consists of a study of the underlying principles of modern dry farming as practiced in the semi-arid sections of the United States. Such questions as locating the dry-farm claim, breaking the sod land, cultivation before and after planting, laying by the crop, equipment necessary, etc., will be studied. Professor Stewart.

Required of Juniors specializing in Agronomy and elective for other students in Agriculture prepared to take the work, second semester, 2 hours.

Agron. 9. *Experimental Agronomy*. Special work for advanced students, conducted in the field and laboratory, the aim being to familiarize them with the theories of investigation as they apply to the farm and to Station work. Professor Stewart.

Required of Seniors specializing in Agronomy and elective for other students in Agriculture prepared to take the work, first semester, 3 hours practice.

Agron. 11. *Field Crops (Cereals)*. This course includes a study of the various cereal crops of the farm, with special reference to history of the crop, structure of the plant, classification, adaptation, areas of production, methods of production, natural enemies, uses, market conditions, and methods of improvement. Mr. Smith.

Required of Sophomores in Agriculture, first semester, 3 hours.
Prerequisite, Biol. 20.

Agron. 12. *Field Crops (Forage Plants)*. The same general outline is followed in this Course as in Agron. 11, the forage crops being studied instead of common cereals. Mr. Smith.

Required of Sophomores in Agriculture, second semester, 3 hours. Prerequisite, Biol. 20.

Agron. 13. *Soil Physics*. A study of the physical properties of soils and their relation to tillage and cultural methods. Special attention is given to the relation of water to soils. Field and laboratory experiments are conducted to show the relation of crop production and the physical properties of various soils. Mr. Barlow.

Required of Juniors in Agriculture, first semester, 2 hours plus 3 hours practice, of Juniors in Irrigation Engineering, first semester, 2 hours. Prerequisite, Chem. 11 and 12.

Agron. 14. *Soil Fertility*. This course is a continuation of Agron. 13. It includes a study of the physical, chemical, and biological properties of soils and their relation to the maintenance of soil fertility. A study is made of the use of manures and fertilizers. Mr. Barlow.

Required of Juniors in Agriculture, second semester, 2 hours plus 3 hours practice, of Juniors in Irrigation Engineering, second semester, 2 hours. Prerequisite, Agron. 13.

Agron. 15. *Advanced Work in Soils*. The work of this course is a continuation of Agron. 14, and consists of special

experimentation and lecture work on such subjects as fertilizers, inoculation, seepage and alkali studies. This course may be a major or minor subject for graduate work if desired. Mr. Barlow.

Elective, hours to be arranged.

Agron. 16. *Advanced Work in Crops*. Students desiring advanced work in crops may arrange for special laboratory and field work in plant breeding, tillage methods, rotation of crops. Professor Stewart and Mr. Hamilton.

Elective, hours to be arranged.

Agron. 17. *Agronomy Seminar*. In this course an effort will be made to study the current literature concerning field crops and soils.

Required of Seniors specializing in Agronomy and elective for other students in Agriculture prepared to take the work, first semester, 1 hour.

Agron. 18. *Agronomy Seminar*. A continuation of Agron. 17.

Required of Seniors specializing in Agronomy and elective for other students in Agriculture prepared to take the work, second semester, 1 hour.

Agron. 20. *Field Machinery*. This course is designed to familiarize students with the usual farm implements and machinery, particular stress being given to the types best suited to New Mexico conditions. The course will include studies of the construction and use of different forms of plows, haying machinery, windmills, pumps, wagons, drills, etc., their adaptation, and the conditions under which they can be used economically. Mr. Hamilton.

Required of Sophomores in Agriculture, second semester, 1 hour plus 3 hours practice. Prerequisite, M. E. 31.

Agron. 21. *Advanced Work in Field Machinery.* Students desiring advanced work in Agricultural Engineering may arrange for special laboratory and field work in this line. The same may be taken as a major or minor subject for advanced degree. Professor Stewart and Mr. Hamilton.

Elective for Juniors and Seniors in Agriculture, first semester, hours to be arranged.

EQUIPMENT.

The department of agronomy occupies space in the agricultural building for laboratories, lecture rooms, and offices. It also has a soil physics laboratory in Science Hall, its proportionate part in the large experiment station corrals, and a large adobe building for the storing of field crops, feeds, and light machinery. For the studies in soils, both general and technical, the department is well equipped with modern appliances. For the studies in crops, the laboratories contain all necessary permanent equipment. Each year new supplies of cereals, grasses, and forage crops are grown on the college farm for the use of the classes, and fresh supplies of foreign seeds are obtained when needed. The classes in agricultural engineering have access to different types of almost every field machine used in this region. The department is also well supplied with all drawing materials necessary for the classes in farm buildings. Extensive experiments carried on by the department with crops and soils are continually used in way of demonstration,—the immediate vicinity affording ample facilities for studying soil formation, transportation, and farm management.

DEPARTMENT OF ANIMAL HUSBANDRY.

PROFESSOR FOSTER.

MR. MEEKS.

MR. MAYNARD.

MR. THOMPSON.

In view of the fact that the live stock industry is the leading industry of New Mexico and that its further development has wonderful possibilities, a strong course in animal husbandry is given with special reference to state conditions. The subjects are pursued from a practical as well as a scientific standpoint, having in view the thorough equipment of young men for successful work in breeding, care, and management of large herds.

A. H. 1. *Types of Live Stock*. This is a practical course in the study of animal type, form, and quality, and their relation to the utility of animals, suitability for breeding and market demands. The score card is used until the student gets thoroughly familiar with the desired conformation, when classes are made up for comparative judging. The first semester is devoted to a study of horses, beef cattle, and dairy cattle. Mr. Maynard.

Required of Freshmen in Agriculture, first semester. 1 hour plus 3 hours practice.

A. H. 2. *Types of Live Stock*. A continuation of preceding course; for the first several weeks, a study of hogs and sheep occupying the practice periods, followed by practice work in planning and carrying out the work of a poultry plant. The recitation periods are devoted to study of the poultry industry, as adapted to New Mexico conditions, including history and characteristics of the leading breeds; feed, care, and management of fowls for eggs and market, principles of breeding, caponizing, and marketing of poultry and eggs, planning and arrangement of poultry houses, diseases and parasites and their treatment, and artificial incubation and brooding. Mr. Maynard and Mr. Thompson.

Required of Freshmen in Agriculture, second semester, 2 hours plus 2 hours practice.

A. H. 3. *Practice in Live Stock Management.* This course is intended largely to prepare the students in the practical application of the many things that are necessary in the successful management of live stock. It consists of demonstrations and actual work in handling the various kinds of live stock, such as dehorning cattle, dipping stock, castrating animals, restraining animals for various operations and other purposes, fitting animals for sale and show, trimming feet, shearing sheep, fitting harnesses and hitching horses, training and breaking colts, and the use of various convenient appliances useful in handling stock. The student will thus be better prepared to take charge of stock farms and direct and perform the actual operations necessary for conducting the business. Mr. Meeks.

Required of Juniors in Animal Husbandry, elective for other students in Agriculture, first semester, 2 hours plus 2 hours practice.

A. H. 4. *Stock Judging.* Students are drilled in the comparison of animals, and their utility and adaptability to different conditions. The practical work of judging is supplemented by text books and lecture work on the history, development, characteristics, and suitability of horses, cattle, sheep, and swine for various purposes. The student is familiarized with the excellences and deficiencies of the different breeds, specially those best adapted to New Mexico conditions. Mr. Meeks.

Required of Juniors in Animal Husbandry, elective for other students in Agriculture, second semester, 2 hours plus 3 hours practice.

A. H. 5. *Stock Judging.* A continuation of the preceding course. Professor Foster and Mr. Meeks.

Required of Seniors specializing in Animal Husbandry, elective for other students in Agriculture, first semester, 2 hours plus 3 hours practice.

A. H. 6. *Veterinary Science*. This course consists of a study of animal anatomy and pathology. The work in anatomy familiarizes the student with the structure of farm animals, so that he can more intelligently select, feed, and care for his stock. The work in pathology includes the causes, prevention, diagnosis and treatment of the more common diseases met with among farm animals. It gives the student a general knowledge of some of the most dangerous and common contagious and infectious diseases, with methods of eradicating them from the country. Special attention will be given to horseshoeing with relation to the conformation and structure of the horse's foot, and to unsoundness and blemishes of horses. Mr. Meeks.

Required of Juniors in Agriculture, second semester, 3 hours.

A. H. 7. *Stock Feeding*. A study is made of the digestive system, principles of nutrition, and the composition of different feedstuffs, with a comparison of their relative values in feeding different kinds of stock, obtained from a study of the experiments conducted at the different stations. Special emphasis is put upon the compounding of rations from feeds available to New Mexico farmers and the profitable feeding of stock under New Mexico conditions. Professor Foster.

Required of Juniors in Agriculture, first semester, 3 hours.

A. H. 8. *Animal Breeding*. This course covers the laws governing the breeding of animals, and includes study of breed formation, principles of heredity, laws of correlation, variation, fecundity, atavism, in-and-in breeding, parentage, form types, and pedigrees. Attention is given to the selection of such animals as would aid in the improvement of New Mexico stock. Professor Foster.

Required of Seniors specializing in Animal Husbandry, elective for other students in Agriculture, second semester, 3 hours.

A. H. 10. *Herd Books*. The time in this is given over

to a study of the pedigrees and their importance in selecting and breeding stock. It affords a training in the intelligent use of the various herd books and a study of the prominent families and tribes, and the influence of using their blood for breeding. Mr. Maynard.

Required of Seniors specializing in Animal Husbandry, elective for other students in Agriculture, second semester, 2 hours plus 2 hours practice.

A. H. 11. *Farm Dairying*. This course comprises a study of the properties of milk and its products. A thorough discussion of the following subjects is taken up in the classroom and laboratory: sanitary conditions in the milking house, cares of milk, creaming, separating, testing, pasteurizing, churning, and marketing products. It also includes a study of the secretion, composition, food value, care, changes and adulteration of milk. A thorough study is made of hand separators, pasteurizers, churns, and other equipment. Mr. Meeks.

Required of Sophomores in Agriculture, first semester, 2 hours plus 3 hours practice.

A. H. 12. *Dairy Manufactures*. This course is designed to give the student a general knowledge of dairy manufactures, and particular training in butter and cheese making. Pasteurization, starter making, and tests for butter-fat in all dairy products, as well as tests for moisture, acidity, salt, and adulteration are carried out in the laboratory along with the making of butter and cheese. A study is made of creamery organization, equipment, and management. Lectures are given on dairy laws and regulations, imitation butters, city milk supply, ice cream, and condensed milk. Mr. Meeks.

Elective for Juniors in Agriculture, second semester, 3 hours plus 3 hours practice.

A. H. 16. *Farm Poultry and Dairying*. Farm poultry includes a study of the history and characteristics of some of

the leading breeds, and their adaptabilities to household use. The feed, care, and management of fowls for eggs and for market, methods of killing and dressing poultry. Planning and arranging poultry houses; diseases and parasites and their treatment. Artificial incubation and brooding and methods of preserving eggs will be studied in this course. Dairying includes a study of sanitary milk production and the hygienic care and management of milk and cream. Further the course presents an opportunity to acquire a knowledge of butter making and some of the most important governing factors in the manufacture of butter. The department wishes to make this course a practical and beneficial source of information that can be applied by those specializing in domestic science. Mr. Thompson and Mr. Maynard.

Required of Freshmen in Household Economics, second semester, 1 hour plus 2 hours practice.

EQUIPMENT.

Live Stock. The equipment in live stock is very good. Various breeds of cattle are represented in the college herd by both males and females of the standard dairy and beef breeds: Jerseys, Guernseys, Holsteins, Herefords, Shorthorns and Aberdeen-Angus. Very good types of Rambouillet and Shropshire sheep are kept for instruction as well as some very fine specimens of Tamworth, Yorkshire, and Duroc-Jersey swine. All of the pure bred stock have either been selected from show stock or are descendants from prize-winning stock at the leading live stock shows. The poultry section consists of about two acres divided into eight pens, each containing its individual house. White Wyandottes, White Plymouth Rocks, Light Brahmas, Brown Leghorns, and Buff Orpingtons are at present being bred on the farm. A feed house, brooder house, and an incubator cellar furnish quarters for various makes of incubators, brooders, bone cutters, dry feed hoppers, and other equipment.

Dairy Laboratory. Two large rooms on the lower floor of Wilson Hall are equipped for the dairy laboratory. Twelve hand separators representing the latest models of standard machines are available for use by the students. The power is obtained from a steam engine and a boiler, which also supplies steam for heating water and sterilizing the utensils. The other equipment consists of a power churn, hand churn, Babcock testers, both steam and hand, butter workers and printers, tables, cases, washing sinks, and a general assortment of apparatus for acid tests, moisture tests and the various kinds of dairy work. Besides this a small dairy is kept up at the farm where the milk from the college herd of 20 cows is cared for. All of the milk is separated and the cream churned in the dairy, and a supply of milk and cream is always available for use in the laboratories.

DEPARTMENT OF HORTICULTURE.

PROFESSOR GARCIA

MR. RIGNEY

MR. SMITH

MR. FITE

The endeavor in teaching this subject is to train young men for successful work in horticultural pursuits, such as fruit growing, nursery business, market gardening, and landscape gardening, and to fill positions as fruit farm managers, experiment station workers, and teachers of horticulture. This instruction is given by text books and lectures, supplemented by outside reading, laboratory practice, and field observations.

Hort. 1. *Gardening*. This work consists of lectures and laboratory practice in vegetable growing, fruit growing, floriculture and landscape gardening. The student is expected to keep notes on all work, and practice in the green house and garden is given. Mr. Rigney.

Required of Freshmen in Household Economics, first semester, 1 hour plus 2 hours practice.

Hort. 2. *Plant Propagation*. The work is introductory in nature in regard to the general methods of propagating, such as seedage, cuttage, layerage, etc., but more complete instruction in the methods of propagating the common fruits is given. In the practice work the commercial methods of budding and grafting are emphasized. Mr. Rigney.

Required of Freshmen in Agriculture, second semester, 1 hour plus 3 hours practice.

Hort. 3. *Floriculture and Landscape Gardening*. A study of systems of landscape gardening, comprising such subject matter as laying out and planting residence grounds; location of houses and other buildings, avenues, drives and walks; the setting of ornamental trees, shrubs, and flowers, adapted to planting in New Mexico; lawns, beds, and borders; and the general principles involved in the arrangement and

planting of home grounds and farms for beauty, comfort, and utility. Professor Garcia.

Required of Sophomores in Agriculture, first semester, 1 hour plus 2 hours practice.

Hort. 4. *Vegetable Gardening*. This study is of the different vegetable crops; the tillage, care, and planting of the garden; the use of cold-frames, hot-beds, and green houses; and the adaptation of varieties to local conditions. Lectures from practical gardeners, and trips to nearby gardens will be included in this course. Mr. Rigney.

Required of Sophomores in Agriculture, second semester, 3 hours.

Hort. 5. *Fruit Growing*. A short lecture course on orchard practices, including planning, planting, tillage, pruning, spraying, packing, classifying, marketing, etc. The object is to give a good fundamental knowledge of orcharding to general agricultural students. Professor Garcia.

Required of all Juniors in Agriculture, first semester, 3 hours.

Hort. 6. *Viticulture and Nut Culture*. An advanced course in the study of grapes, and of nut bearing trees. Mr. Rigney and Mr. Wilson.

Required of Juniors in Horticulture, elective for other students in Agriculture, second semester, 2 hours.

Hort. 7. *Forestry*. This course includes the study of windbreaks, utility of forest plantations, and the general influence of forests on the climate and water courses. Attention is given to the forest conditions in New Mexico, and also to the species of trees adapted to street planting in this climate. Mr. Rigney.

Required of Juniors in Horticulture, elective for other students in Agriculture, first semester, 2 hours plus 2 hours practice.

Hort. 8. *Olericulture*. Advanced study and research

work along special lines of vegetable gardening. Mr. Rigney.

Required of Seniors in Horticulture, second semester, 1 hour plus 3 hours of laboratory work.

Hort. 9. *Pomology*. This work consists of a study of the principal types of orchard fruits and small-fruits; their varieties, related forms, modifications, and adaptations under culture. It is an advanced course in the study of fruits. Mr. Rigney.

Required of Seniors in Horticulture, first semester, 3 hours. Prerequisite, Hort. 5.

Hort. 11. *Systematic Pomology*. A study of the varieties of fruits, with practical work in classifying and judging. Professor Garcia.

Required of Seniors in Horticulture, first semester, 2 hours practice.

Hort. 12. *Pomology Seminar*. Preparation and discussion of papers on special horticultural subjects. Professor Garcia.

Required of Seniors in Horticulture, second semester, 2 hours.

Hort. 13. *Packing*. The handling and packing of fruits and vegetables in preparation for the market. A study of machinery, materials, and storage facilities is given with practical experience. Mr. Rigney.

Required of Seniors in Horticulture, elective for other students in Agriculture, first semester, 2 hours practice.

Hort. 14. *Pruning*. Special study of bud and tree growth, with instruction and practice in the art of pruning. Professor Garcia.

Required of Seniors in Horticulture, elective for other students in Agriculture, second semester, 1 hour plus 2 hours practice.

Hort. 15. *Canning*. Practical work in canning, with a study of machinery, methods, and cost. Mr. Fite.

Required of Seniors in Horticulture, elective for other students in Agriculture, first semester, 4 hours practice.

Hort. 17. *Plant Breeding*. The student having completed his biological studies is prepared for a discussion of plant breeding and the evolution of cultivated plants. Selection, crossing, variation, mutation, and the influence of environment, food, etc., are investigated. Mr. Smith.

Required of Seniors in Horticulture and Agronomy, first semester, 3 hours practice.

Thesis. Original research work in horticulture under the supervision of the head of the department.

Required of Seniors in Horticulture, second semester, 5 hours.

GRADUATE WORK.

Advanced work in horticulture is offered to students who are qualified and wish to specialize along this line. Special opportunities are offered for the study of problems bearing upon pomology, olericulture, and forestry. Some of the lines along which the student may work are:

Pomology. The orchards and vineyards of the department, containing a large number of varieties, furnish abundant material to the student who wishes to make a comparative study of varieties as well as of their adaptability to this climate.

Olericulture. Most of the time in this course will be devoted to problems relating to economic production of vegetables and marketing through various organizations. In addition to this, special study will be made of variations and adaptations to various climates and conditions.

Forestry. A study of forest economics, history of for-

estry, the relation of the forests directly and indirectly to the public welfare, forest administration, study of the factors influencing prices of lumber and forest products.

Landscape Gardening. Most of the time in this course will be devoted to the laying out of large public grounds and parks. Special attention will be given to the adaptability of ornamental plants to this climate.

EQUIPMENT.

This department has an excellent horticultural library, a number of different styles of orchard and garden cultivation, a good supply of the different kinds of pruning knives, shears, and saws, as well as garden trowels and dibbers, five kinds of sprayers, and a fair collection of fruits preserved in formalin.

The department also has a twenty-three-acre farm, where all the investigational work is conducted. The experimental orchards and vineyards contain many varieties of fruit trees and vines. Apples, peaches, pears, plums, cherries, apricots, small fruits, and grapes afford an excellent opportunity for the study of varieties and of cultural methods. Vegetable gardens, cold-frames, and green-houses, are available for practice and for experimental work. The arboretum, lawns and flower gardens give splendid facilities for observation and study.

During the past year the department installed a cannery. This is fully equipped with three different kinds of pressure boilers, the largest of which has a capacity of from 1500 to 3500 cans a day. The rest of the equipment is excellent also, consisting of a full supply of knives, pans, peelers, capping and tipping irons, etc. Apples, peaches, grapes, etc., with a variety of vegetables are obtained from the farm for practice. Three different kinds of fruit graders are installed for practice in grading and packing fruit.

DEPARTMENT OF HOUSEHOLD ECONOMICS.

PROFESSOR MILLER.

MISS THISSELL.

The department of household economics provides instruction primarily in domestic art and domestic science. In domestic art, courses are offered in sewing, dressmaking, house decoration, millinery, and textiles; in domestic science, courses are offered in foods, household management, home nursing, and dietetics. But students registering in this department are expected also to take courses in chemistry, physics, biology, agriculture, and other closely allied subjects.

The work in household economics is planned especially for college students, but students in the preparatory department who do not expect to enter college may elect courses in foods, sewing, gardening, dairying and farm poultry.

Students should confer with the head of the department before registering.

DOMESTIC ART.

H. E. 1. *Sewing I.* This course covers the various stitches in hand-sewing, and the use of sewing machine. The stitches are applied in the making of cooking uniform, a sewing apron, and a lingerie waist. Lessons are also given in mending, darning and patching. Miss Thissell.

Required of Freshmen in Household Economics, and elective for Third Year Preparatory students, first semester, 2 hours plus 4 hours practice.

H. E. 2. *Sewing II.* This course is a continuation of H. E. 1. A complete suit of underwear is finished and the remaining time is given to the making of simple dresses. Miss Thissell.

Required of Sophomores in Household Economics, and elective for Fourth Year Preparatory students, second semester, 2 hours plus 4 hours practice. Prerequisite, H. E. 1.

H. E. 3. *Dressmaking and Tailoring.* Instruction is

given in the principles of garment making, taking measurements, cutting and fitting. This course includes the making of a tailored gown, also an afternoon and party dress. Miss Thissell.

Required of Juniors in Household Economics, first semester, 6 hours practice. Prerequisite, H. E. 1 and 2.

H. E. 4. *Millinery*. The practical construction of hats of typical kinds, and their trimming for all seasons. Miss Thissell.

Required of Juniors in Household Economics, second semester, 6 hours practice. Prerequisite, H. E. 1.

H. E. 7. *House Decoration*. A practical course in the decoration and furnishing of the entire home. The problem of artistic and economic furnishing and the cost of materials are considered. Work in simple embroidery is included in this course. Miss Thissell.

Required of Seniors in Household Economics, first semester, 1 hour plus 4 hours practice.

H. E. 8. *Textiles*. This course covers the study of fibers and materials, their history and manufacture. The laboratory work includes the proper use of agents in relation to the dyeing and cleansing of fabrics. Practical work in weaving and basketry is also given. Miss Thissell.

Required of Seniors in Household Economics, second semester, 1 hour plus 4 hours practice.

DOMESTIC SCIENCE.

H. E. 10. *Foods I*. This course includes a study of the food principles as found in the different classes of foods, and the preparation of dishes to illustrate each principle. Professor Miller.

Required of Freshmen in Household Economics, and elective for Third Year Preparatory students, second semester, 2 hours plus 4 hours practice.

H. E. 11. *Foods II.* Continuation of H. E. 10. The practice work includes the preparation of fancy breads, salads, cakes and pastries. Professor Miller.

Required of Sophomores in Household Economics, and elective for Fourth Year Preparatory students, first semester, 2 hours plus 4 hours practice.

H. E. 13. *Foods III.* This course applies particularly to the study of manufactured products and the relative cost of food. The laboratory work includes the preparation of more complicated dishes and the planning, cooking and serving of breakfasts, luncheons and dinners. Professor Miller.

Required of Juniors in Household Economics, first semester, 2 hours plus 3 hours practice. Prerequisite, H. E. 10 and 11.

H. E. 14. *Dietetics.* Foods are considered as to chemical composition, physiological properties and their relative value as nutritive agents; also the planning of hygienic combinations and balanced dietaries. Professor Miller.

Required of Juniors in Household Economics, second semester, 2 hours plus 3 hours practice. Prerequisite, H. E. 13.

H. E. 15. *Household Management.* In this course, the house is considered from a sanitary and architectural standpoint. The situation, surroundings and construction of the house are studied; also the ventilation, water supply and drainage. Plans for the organization of the household and the general management of the home are presented. Professor Miller.

Required of Seniors in Household Economics, first semester, 3 hours.

H. E. 16. *Home Nursing and Invalid Cookery.* This course includes lessons on the furnishing, warming and ventilating of the sick room and administering to the patient; also the preparation of food suitable for the patient and the relation of certain foods to particular diets and diseases. Professor Miller.

Required of Seniors in Household Economics, second semester, 2 hours plus 2 hours practice. Prerequisite, H. E. 14.

The School of Engineering

The School of Engineering

FACULTY.

GEORGE EDGAR LADD, Ph. D., President of the College.

ARTHUR FRANKLIN BARNES, B. S. in M. E., Dean of Engineering and Professor of Mechanical Engineering.

MARION SHIRLEY BOWEN, Professor of Practical Mechanics.

RALPH WILLIS GODDARD, B. S. in E. E., Professor of Electrical Engineering.

*GEORGE PATRICK STOCKER, B. S. in C. E., Associate Professor of Civil Engineering.

FRANK ARTEMUS HITCHCOCK, M. S., in C. E., Professor of Civil Engineering.

JOHN WILLIAM JOURDAN, B. S. in C. E., Instructor in Irrigation and Civil Engineering.

WILLIAM EMIL TARBEL, Instructor in Practical Mechanics.

*On one year's leave of absence.

The School of Engineering

The following are the departments of instruction in the School of Engineering:

- I Department of Civil Engineering.
- II Department of Electrical Engineering.
- III Department of Irrigation Engineering.
- IV Department of Mechanical Engineering.

Engineering has been defined as the utilization of nature in the service and for the benefit of mankind, as illustrated in the construction and use of machinery, the erection and maintenance of structures, and the discovery, decomposition, and recomposition of the component parts of material things. The field thus described is so vast that it is impractical in this age of specialization for one to cover the whole, and for the needs of the southwest, four-year courses are given by the several departments in civil, electrical, irrigation and mechanical engineering, leading to the degree of Bachelor of Science in the course taken.

In addition to this, practical courses are offered in automobile practice, blacksmithing, carpentry, gas engine, and machine shop practice. These one and two year courses meet the needs of the young men who may not be able to pass the college entrance requirements.

The courses of study given by the various departments aim first to give a thorough grounding in the mathematics and physical sciences related to engineering with the application of these subjects to the fundamental and special branches of engineering, and second, to allow a considerable amount of specialization and practice along the several lines of study offered by the school.

Much time is necessarily devoted to higher mathematics and to technical subjects; yet certain fundamental studies, necessary to a broad and liberal education, such as English, physics, chemistry, foreign languages and economics are provided for.

Instruction is given by lectures, recitations, and classroom discussions, together with practice in laboratories, shops and field work. The whole is so combined as to constitute a symmetrical course of study.

The plan of study in the engineering courses is as follows. An identical course is given for the first year and one-half, thus giving the student a solid foundation in the basic subjects of mathematics, physics, drawing and shop work. At the same time this gives opportunity for the young man to become familiar with the scope and character of work in the various branches. In the second semester, sophomore year, specialization begins, but until the end of the first semester, junior year, the majority of the courses are those fundamental to all engineering rather than to any particular branch. In the last year and a half extensive specialization is the practice, at the end of which time the student is ready to enter his chosen profession.

EQUIPMENT AND FACILITIES FOR INSTRUCTION.

The new engineering building, completed in 1913, affords every facility for work in engineering. It contains the physics, materials testing, and electrical laboratories, with lecture, recitation and drawing rooms in connection, as well as the engineering library. An extension of this building contains the wood and machine shops, all thoroughly equipped with the latest apparatus.

The old engineering building contains the mechanical engineering laboratory, forge, foundry and auto shops.

The engineering library is an extension of the main

library of the College and is provided with the standard works on the several branches of engineering and allied subjects. To this is being added from time to time new books which are of special worth. The library is also supplied with about twenty of the leading journals and magazines on various engineering subjects.

GRADUATE COURSES.

The degree of Master of Science is conferred upon students holding the degree of Bachelor of Science, upon completion of one year of resident graduate work in engineering, together with an acceptable thesis.

DEPARTMENT OF CIVIL ENGINEERING.

PROFESSOR HITCHCOCK.

MR. JOURDAN.

The work in this department is designed to furnish a thorough course of theoretical instruction accompanied and illustrated by a large amount of practice.

While the course is made practical by giving the student a large amount of practice in the field, draughting room, and laboratory, the main object is the development of mental faculties and judgment. The power to acquire information and the ability to use it are held to be of greater value than any amount of so-called practical knowledge.

The aim of the department is to turn out not graduate engineers only, but men who are so equipped that they will be useful men in the engineering profession and with a few years of actual experience in that profession will be truly civil engineers.

C. E. 1. *Plane Surveying*. A study of the care, use and adjustment of the more common instruments, together with the theory and practice of land surveying, including the United States land surveys.

Required of Sophomores in Engineering and Agriculture, first semester, 2 hours.

C. E. 3. *Field Practice*. To be taken only in connection with C. E. 1. It includes field problems with chain, tape, level, compass and transit.

Required of Sophomores in Engineering and Agriculture, first semester, 4 hours practice.

C. E. 4. *Advanced Surveying*. This course is a continuation of C. E. 1, but is a more thorough study of the theory of surveying. It includes the use of the higher instruments of precision in city, mining, topographic and hydro-

graphic surveying. The lectures are supplemented by problems based on field notes taken in C. E. 3 and C. E. 6.

Required of Sophomores in Civil and Irrigation Engineering, second semester, 2 hours. Prerequisite, M. E. 2, and C. E. 1 and 3.

C. E. 6. *Practice in Field and Office Work.* To be taken only in connection with C. E. 4. This course includes practical problems illustrating methods employed in land, city, mining, hydrographic and topographic surveys, and the plotting of notes taken in C. E. 1 and 3, together with practice in making connectional designs for topography, the design and arrangement of titles for maps and other drawings, and a study of the planimeter and its uses.

Required of Sophomores in Civil and Irrigation Engineering, second semester, 8 hours practice. Prerequisite, C. E. 1. and 3 and M. E. 2.

C. E. 7. *Railway and Canal Survey.* The theory of field and office work necessary for laying out simple, compound, transitory and vertical curves. This course includes also cross section work and the computation of earth work. The lectures are supplemented by a great variety of practical problems.

Required of Juniors in Civil and Irrigation Engineering, first semester, 3 hours. Prerequisite, C. E. 4 and 6.

C. E. 9. *Railway and Canal Field and Office Practice.* To be taken only in connection with C. E. 7. It is the aim of this course to supplement the lectures of C. E. 7 by a variety of field problems in laying out of curves, making cross sections, and computing earthwork.

Required of Juniors in Civil and Irrigation Engineering, first semester, 4 hours practice. Prerequisite, C. E. 4 and 6.

C. E. 11. *Graphic Statics.* This subject treats of the solution of engineering problems by graphical methods. Appli-

education is made to a variety of practical problems in stress computations.

Required of Juniors in Engineering, first semester, 4 hours practice. Prerequisite, M. E. 2 and 10.

C. E. 12. *Stresses*. The analysis of simple bridge and roof trusses by algebraic and graphical methods. A variety of problems are also given involving stresses caused by dead and moving loads, special attention being given to subject of train loads.

Required of Juniors in Civil Engineering, second semester, 2 hours. Prerequisite, C. E. 11.

C. E. 14. *Framed Structures*. Complete design with detailed drawings and estimate of weights and cost of both a wooden and steel roof truss.

Required of Juniors in Civil Engineering, second semester, 4 hours practice. Prerequisite, C. E. 11 and M. E. 10 and 11.

C. E. 15. *Bridge Design*. This course is the complete design of a R. R. Plate Girder and includes detailed drawings and estimates of weights and costs.

Required of Seniors in Civil Engineering, first semester, 6 hours practice. Prerequisite, C. E. 12 and 14.

C. E. 16. *Bridge Design*. This course is a continuation of C. E. 15, but is the complete design of a riveted or pin connected railway bridge truss, stress sheet, general drawings, and estimates of weights and costs.

Required of Seniors in Civil Engineering, second semester, 6 hours practice. Prerequisite, C. E. 15.

C. E. 18. *Highway Engineering*. A study of the most modern practice in location, and specifications for construction of country highways and city pavements, including materials used with methods for testing the same.

Required of Juniors in Civil Engineering, second semester 3 hours.

C. E. 19. *Reinforced Concrete and Masonry.* This course will include a study of the principles of reinforced concrete construction; analysis and simple problems in design, together with the theory governing the design of masonry structures; some time being devoted to deep foundation work. Practical problems will be given in both masonry work and reinforced concrete.

Required of Seniors in Civil and Irrigation Engineering, first semester, 3 hours. Prerequisite, M. E. 10, 11 and 12 and C. E. 11.

C. E. 20. *Sewage.* A study of the design and construction of sewage systems, composition of sewage, changes produced by bacteria, together with modern methods of treatment, purification and final disposal.

Required of Seniors in Civil Engineering, second semester, 2 hours. Prerequisite, M. E. 12 and I. E. 2.

C. E. 21. *Materials Laboratory.* Standard and laboratory tests in tension, compression, bending, etc., of the principal materials used in construction, such as cast iron, wrought iron, steel, alloys, timbers, brick and building stone. This course also includes complete work in the tests of cement and concrete.

Required of Seniors in Engineering, first semester, 4 hours practice. Prerequisite, M. E. 11.

C. E. 22. *Contracts and Specifications.* The laws of contracts as applied to engineering work, including the writing of advertisements, forms for bids, bonds, and the preparation of engineering specifications.

Required of Seniors in Civil Engineering, second semester, 2 hours.

C. E. 23. *Materials of Construction.* This course comprises a study of the physical and mechanical properties, the occurrence or methods of manufacture, the standard specifications, the adaptability and use of natural and artificial building stones, limes, cements, mortars, concrete, timbers, cast iron, wrought iron, steel and the alloys.

Required of Seniors in Engineering, first semester, 1 hour.

Thesis for the Degree of B. S. in C. E. Original investigation of some engineering problem to be decided upon by the head of the department and the Dean.

Required of Seniors in Civil Engineering, second semester, 4 hours.

EQUIPMENT:

Surveying. The surveying equipment is in excellent condition, the greater part of it being entirely new. It includes one 8-inch transit theodolite complete, five complete engineers' transits of various makes, three Wye levels, two Dumpy levels, one precision Dumpy level with a precise level rod, one complete plane table with alidade of the latest pattern, one traverse table complete, one Saegmueller solar attachment, one latitude level, one Aneroid barometer, three hand levels, one binocular, together with various miscellaneous instruments such as stadia, level and line rods, chains, tapes and bobs. The equipment also contains various instruments available in large offices to facilitate drafting and computing. New additions are being made from time to time as the growth of the work necessitates.

Materials Laboratory. The materials laboratory is in a well lighted basement room with a concrete floor admirably adapted for this purpose. There is now installed in it a universal Olsen testing machine of 60,000 pounds capacity. It is provided for direct motor drive and has an autographic attachment. It is completely equipped with all the necessary

accessory attachments for tensile, compressive, transverse and shearing tests. There is also a beam loading table for the flexural tests of re-inforced concrete beams. The laboratory is further equipped with all the required apparatus for making standard commercial tests on cement, concrete, brick and building stone. This includes a 200,000 pound Olsen hydraulic machine for compression tests, Riehle and Fairbanks automatic shot machines for tensile tests, Vicat and Gilmore needles, specific gravity apparatus, sieves and shaker, mechanical mixer, steaming apparatus for accelerated tests of soundness, water tank, moist closed, slate topped work tables, etc. The laboratory equipment is constantly being added to and improved.

DEPARTMENT OF ELECTRICAL ENGINEERING.

PROFESSOR GODDARD.

The course in electrical engineering is designed to give the student not only a liberal education, but also a thorough knowledge of the fundamental laws of electricity through theory and practice, so that he may attack any problem that may arise with confidence in himself and his ability to work it out to a successful conclusion. The chief purpose and aim of the course is to teach scientific and systematic methods of solving problems, in general, for rapid and accurate results, and not the solution of a few particular ones. The engineer of today and especially in a new country like our southwest seldom meets two propositions exactly alike, but rather each undertaking is a new problem and has to be solved by methods best suited to its particular case. The ability to choose the best methods of attack and to carry these through with rapidity and accuracy to a satisfactory conclusion makes the successful engineer.

E. E. 1. *Elements of Electrical Engineering.* Theory of electrostatics, electromagnetics, and electric circuits. This course gives a thorough grounding in the fundamentals of electrical engineering.

Required of Juniors in Engineering, first semester, 4 hours.
Prerequisite, Phys. 12 and Math. 20.

E. E. 2. *Dynamo Electric Machinery.* A continuation and development of E. E. 1 including direct current electrodynamic machinery.

Required of Juniors in Mechanical and Electrical Engineering, second semester, 2 hours. Prerequisite, E. E. 1.

E. E. 3. *Alternating Current Theory.* Theory of alternating current circuits and apparatus, single and polyphase,

including mathematical and graphic methods of calculation and representation.

Required of Seniors in Electrical Engineering, first semester, 4 hours. Prerequisite, E. E. 1.

E. E. 4. *Alternating Current Theory.* A continuation of E. E. 3, including a more critical study of A. C. apparatus.

Required of Seniors in Electrical Engineering, second semester, 3 hours. Prerequisite, E. E. 3.

E. E. 6. *Electric Power Transmission.* A study of the transmission of electrical energy for lighting and power purposes by different systems: wiring methods with insurance rules and regulations; the design, construction, and maintenance of transmission lines of high and low potentials.

Required of Seniors in Electrical Engineering, second semester, 3 hours. Prerequisite, E. E. 1.

E. E. 7. *Electrical Engineering Design.* The design of electro-magnets and direct current dynamo-electric machinery.

Required of Seniors in Electrical Engineering, first semester, 1 hour plus 4 hours practice. Prerequisite, E. E. 2.

E. E. 8. *Electrical Engineering Design.* A continuation of E. E. 7 including the design of alternating current generators, motors and transformers.

Elective for Seniors in Electrical Engineering, second semester, 4 hours practice. Prerequisite, E. E. 3 and 7, and registration in E. E. 4.

E. E. 10. *Electric Railways.* A study of electric railway systems and their principal parts, including track and trolley construction, motors, and their characteristics, rolling stock, etc.

Elective for Seniors in Electrical Engineering, second semester, 2 hours. Prerequisite, E. E. 1.

E. E. 12. *Telephone Engineering*. A study of telephone systems and telephone apparatus.

Elective for Seniors in Electrical Engineering, second semester, 2 hours. Prerequisite, E. E. 1.

E. E. 14. *Illuminating Engineering*. A study of different types of electric lamps shades, diffusers, and reflectors; their construction and characteristics; photometry; the calculation of proper illumination and spacing of lamps for different purposes.

Elective for Seniors in Electrical Engineering, second semester, 2 hours. Prerequisite, E. E. 1.

E. E. 16. *Storage Battery Engineering*. A study of storage cells, their construction, action, and characteristics, with methods of application to practical operation.

Elective for Seniors in Electrical Engineering, second semester, 2 hours. Prerequisite, E. E. 1.

E. E. 18. *Power Transmission*. The design and construction of high potential power transmission lines.

Elective for Seniors in Electrical Engineering, second semester, 2 hours. Prerequisite, E. E. 3, and registration in E. E. 4 and 6.

E. E. 20. *Electrical Engineering Laboratory*. The operation and testing of electric instruments, lamps, motors, generators, and auxiliary apparatus.

Required of Juniors in Engineering, second semester, 4 hours practice. Prerequisite, E. E. 1.

E. E. 21. *Electrical Engineering Laboratory*. A continuation of E. E. 20, including the transformer, polyphase power measurements, and alternating current generator.

Required of Seniors in Electrical Engineering, first semester, 4 hours practice. Prerequisite, E. E. 20, and registration in E. E. 3.

E. E. 22. *Electrical Engineering Laboratory*. A con-

tinuation of E. E. 21, including the induction motor, synchronous motor and rotary converter.

Required of Seniors in Electrical Engineering, second semester, 4 hours practice. Prerequisite, E. E. 3 and 21, and registration in E. E. 4.

Thesis for Degree of B. S. in E. E. Original investigation in some engineering problems to be decided upon by the head of the department and the Dean.

Required of Seniors in Electrical Engineering, second semester, 4 hours.

EQUIPMENT.

The electrical laboratory contains a varied collection of modern machinery, arranged for general utilization, test work, or special study. These machines are served by a system of conductors installed in conduit, whereby any machine may be connected electrically to any other through a large plug switch-board. Provision is also made so that the different motors and generators may be mechanically connected either by means of belts or flexible coupling. The laboratory is also equipped with suitable instruments for measuring electrical power, potentials, and currents, as well as apparatus to facilitate the carrying on of all of the common tests of electrical machinery, both stationary and dynamic.

A partial list of the above-mentioned apparatus follows. New additions are constantly being made as the needs of the laboratory demand or new things are placed upon the market.

A 22½ K. W. bank of transformers for transforming 2,200 volt 60 cycle alternating current from the Las Cruces Electric Company's plant to various potentials for use about the laboratory.

A 72 receptacle plug switch board.

A 10 H. P., three phase, 220 volt, induction motor.

A 3 H. P. three phase, 220 volt, induction motor.

A 9 K. W. 250 volt direct current generator.

A 7½ K. W. 250 or 110 volt direct current generator.

A 3 H. P. 110 volt Westinghouse Type SK. motor.

A 2 K. W. rotary converter, 250 volts D. C. 110,—178 volts A. C.

A 2½ K. W. 110 volt direct current generator.

A 2½ K. V. A. 110 volt alternating current three phase generator.

A 2½ K. V. A. 220-110 volt, 110-55 volt special test transformer with 86% taps for Scott three phase, two phase transformation.

Two 2 K. V. A. 220-110 volt, 110-55 volt test transformers.

Three 5 K. W. lamp banks with switching arrangements.

An electric arc welding plant.

A polyphase power measurement switchboard.

A general Electric Company's three element oscillograph with auxiliary apparatus for observing or photographing all alternating current phenomena.

Full equipment of no-voltage release and overload release, motor starting boxes, auto transformers and starters for induction motors, field and armature resistances, circuit breakers, fuse blocks, switches, inductances, condensers, prony brakes, and brake pulleys, samples of arc and incandescent lamps, including the new nitrogen filled lamp.

DEPARTMENT OF IRRIGATION ENGINEERING.

MR. JOURDAN.

Irrigation engineering comprises the design, construction and maintenance of irrigation systems both large and small.

Especial attention is given in the first three years of the irrigation course to the foundation subjects upon which all engineering practice is based. Courses have been selected from the departments of agriculture, mechanical, electrical, and civil engineering to give the student a good liberal education and a general knowledge of engineering. Surveying is covered in all its phases; steam and gas engines, electrical motors and machinery, design of structures and the various branches of agriculture all receive attention. In the Junior and Senior years the irrigation courses take up the subject of irrigation from all standpoints. Water supply, dams, and irrigation structures, canal systems, drainage, measurement of water, pumping and irrigation laws are studied.

Upon completion of the irrigation course, the graduate will have a good knowledge of the many problems confronting the irrigation engineer in the southwest and should be able to do creditable work in this most attractive branch of the engineering profession.

I. E. 2. *Hydraulics*. This course consists of a brief study of the elementary principles of the mechanics of fluids and a more thorough study of the flow of water under various conditions; including measuring devices such as orifices, weirs, rating flumes, and current meter. Some time is devoted to theory and construction of pumping machinery and hydraulic motors.

Required of Juniors in Engineering, second semester, 3 hours.
Prerequisite, M. E. 10 and 11.

I. E. 4. *Principles of Irrigation*. History of irrigation,

preparation of land for irrigation, the use of water applied to the soil, growth of plants, methods of irrigating, measurement and duty of water, management of canal systems.

Required of Juniors in Irrigation Engineering and Agriculture, second semester, 3 hours.

I. E. 5. *Irrigation Engineering*. Planning irrigation systems, the location, design and cost of canals, study of irrigation structures, dams and reservoirs, pumping for irrigation, water losses from reservoirs and canals, management of irrigation systems.

Required of Seniors in Irrigation Engineering, first semester, 4 hours. Prerequisite, I. E. 2 and 4.

I. E. 7. *Water Power Engineering*. A study of the theory, investigation, and development of Water Power. The work of the text will be supplemented by a variety of practical problems.

Required of Seniors in Irrigation and Civil Engineering, first semester, 3 hours. Prerequisite, I. E. 2 and M. E. 10 and 12.

I. E. 9. *Drainage*. Movement of water in soils, water-logging and alkali, types of drain and drainage systems, organization of drainage districts.

Required of Seniors in Irrigation Engineering, first semester, 2 hours. Prerequisite, I. E. 4.

I. E. 10. *Public Water Supply*. This course covers the theory and development of water supplies for domestic, manufacturing, and fire service. It deals with the quantity of water, sources of supply, quality of water from different sources, communicable diseases, methods of purification and distribution of same.

Required of Seniors in Irrigation and Civil Engineering, second semester, 3 hours. Prerequisite, registration in I. E. 2.

I. E. 12. *Irrigation Design*. The design and estimating

of costs of irrigation structures such as canal linings, flumes, headworks, tunnels, drops, distribution boxes, etc.

Required of Seniors in Irrigation Engineering, second semester, 8 hours practice. Prerequisite, I. E. 5.

I. E. 14. *Irrigation Institutions.* The laws of the surface and underground waters of the western states, rights of way, irrigation organization, irrigation securities and investments.

Required of Seniors in Irrigation Engineering, elective for Seniors in Agriculture, second semester, 2 hours. Prerequisite, I. E. 4 and 5.

Thesis for the Degree of B. S. in I. E. Original investigations of some engineering problems to be decided upon by the head of the department and the Dean.

Required of Seniors in Irrigation Engineering, second semester, 4 hours.

EQUIPMENT.

For field work in irrigation engineering, hydraulic apparatus is provided such as water stage registers, hook gauges, weirs, current meters, etc.

DEPARTMENT OF MECHANICAL ENGINEERING.

PROFESSOR BARNES

PROFESSOR BOWEN

PROFESSOR GODDARD

MR. TARBEL

MR. JOURDAN

The course in mechanical engineering offers instruction in the scientific principles forming the foundation of all engineering, but with special regard to the generation and measurement of power, to the principles of design, construction and operation of machinery, and to the commercial practice of manufacturing and management. The field described above is so broad that the graduate from this work need not confine himself to a particular profession, but is especially fitted to enter upon positions leading to superintendence and management of enterprises, and as a rule should outstrip his competitor who lacks the thorough and systematic training given by this course. The rapid growth of the southwest, with its railroads, power plants and mines, demands an engineer who not only is well trained in his profession but understands the essential principles of efficiency and organization.

M. E. 1, 2. *Engineering Drawing*. Lettering, title designing, dimensioning, geometrical problems, orthographic projection, intersection and development of surfaces. Working drawings, detailing and dimensioning, assembly drawings, tracing and blue-printing, shading and isometric drawings.

Required of Freshmen in Engineering, first and second semester, 4 hours practice.

M. E. 3. *Descriptive Geometry*. In this course problems are given involving the application of principles relating to the point, line and plane; together with a study of the generation and classification of lines, surfaces, tangent planes to surfaces, plane sections, intersections, and developments. The time in the draughting room is devoted to a study of more general problems requiring more time for their solution.

Required of Sophomores in Engineering, first semester, 4 hours practice. Prerequisite, M. E. 2.

M. E. 4. *Machine Drawing*. Representation, dimensioning and specification of machine parts, study of standard commercial forms, sketches, detail and assembly drawings, simple designing from observation and empirical rule.

Required of Sophomores in Mechanical and Electrical Engineering, second semester, 4 hours practice. Prerequisite, M. E. 1, 2 and 3.

M. E. 6. *Machine Design*. Machine drawing is merged into machine design applying the principles of strength of materials and mechanisms with commercial practice to the design of elements of machines, such as journals, gears, cams, and finally the complete design of a simple machine.

Required of Juniors in Mechanical and Electrical Engineering, second semester, 4 hours practice. Prerequisite, M. E. 4, 11 and 15.

M. E. 7. *Machine Design*. Continuation of M. E. 6, involving the complete design of a more complicated machine.

Required of Seniors in Mechanical Engineering, first semester, 4 hours practice. Prerequisite, M. E. 6.

M. E. 8. *Machine Design*. In this course the student is given his choice of designing either steam or gas engine, combining the theory, practice, and principles of operation of these machines with the question of strength, proportion and size of the various elements.

Required of Seniors in Mechanical Engineering, second semester, 4 hours practice. Prerequisite, M. E. 7.

M. E. 10. *Statics*. The work in this course embraces the study of the laws of equilibrium, composition and resolution of forces, center of gravity, moment of inertia and the laws of friction. Analytic and graphical methods applied to the solution of problems taken from engineering practice.

Required of Sophomores in Engineering, second semester, 3 hours. Prerequisite, Math. 12.

M. E. 11. *Strength of Materials*. The laws of stress, strain, and elasticity of materials. The theory of beams, columns and torsion of shafts, reinforced concrete and use of structural steel handbook. Practical problems on the design and investigation form an important part of the course.

Required of Juniors in Engineering, first semester, 4 hours.
Prerequisite, Math. 20 and M. E. 10.

M. E. 12. *Dynamics*. Principles of velocity, acceleration, momentum and impact; work, energy, and power, power transmission, dynamometers, dynamics of the steam engine and other machines. Applications and problems from engineering.

Required of Juniors in Engineering, second semester, 2 hours.
Prerequisite, M. E. 10 and 11.

M. E. 14. *Elements of Power Engineering*. Types and general construction, theory and principles of operation of steam boilers, engines, power plant auxiliaries, gas producers and internal combustion engines. Visits to power plants.

Required of Sophomores in Mechanical Engineering, and of Juniors in Civil and Irrigation Engineering, second semester, 3 hours.

M. E. 15. *Mechanism*. A study of motion and forms of mechanism, velocity and acceleration diagrams, instantaneous centers, belting, cams, gear teeth and gear trains, link work and valve gears, practical problems.

Required of Juniors in Mechanical and Electrical Engineering, first semester, 3 hours. Prerequisite, Phys. 11 and Math. 12.

M. E. 16. *Applied Thermodynamics*. This subject treats of the solution of problems involving the action of heat as applied to steam engines, gas engines and other heat motors. Laws of thermodynamics of gases and saturated vapors and superheated steam. The application of these laws to air compressors and heat engine performance and efficiency.

Required of Juniors in Mechanical and Electrical Engineering, second semester, 3 hours. Prerequisite, Phys. 12, Math. 20 and M. E. 14.

M. E. 17. *Refrigeration and Heat Engines*. This course is a continuation of M. E. 16, but dealing more specifically with the thermodynamics, study, and design of refrigerating machinery, gas engines, steam engines and turbines. Practical problems in design and performance of these machines are the features of the work.

Required of Seniors in Mechanical and Electrical Engineering, first semester, 6 hours practice. Prerequisite, M. E. 16.

M. E. 18. *Power Plant Engineering*. The proper selection of power plant apparatus, cost of power as influenced by equipment, load, operation and maintenance, depreciation, insurance, etc. Comparative merits of steam and gas power, problems.

Required of Seniors in Mechanical and Electrical Engineering, second semester, 6 hours practice. Prerequisite, M. E. 17 and 27.

M. E. 23. *Heating and Ventilation*. Methods of heating and ventilating buildings, direct steam, indirect heating, hot water, furnace, district heating, elements of heating, and ventilating systems. Calculation of heat required for rooms, and heating and ventilating design.

Required of Seniors in Mechanical Engineering, first semester, 3 hours. Prerequisite, M. E. 16.

M. E. 24. *Shop Organization*. The planning of factory buildings and influence of design on their productive capacity, staff and departmental organization, shop departments, office systems, employment of labor and efficiency, principles underlying good management.

Required of Seniors in Mechanical Engineering, second semester, 3 hours. Prerequisite, Senior Engineer.

M. E. 26. *Mechanical Engineering Laboratory*. Calibration and study of engineering test apparatus such as steam gages, indicators, planimeters, meters, speed counters, steam

and fuel calorimeters, gas analysis, valve setting, technical sketches, written reports of tests.

Required of Juniors in Mechanical and Electrical Engineering, second semester, 4 hours practice. Prerequisite, Phys. 12 and M. E. 14.

M. E. 27. *Mechanical Engineering Laboratory*. Operation and performance tests of boilers, pumps, steam and gas engines, etc., with reports upon the same. For civil and irrigation engineers an abridged course is given covering work of M. E. 26 and 27 as outlined for mechanical and electrical engineers.

Required of Seniors in Engineering, first semester, 4 hours practice. Prerequisite, Phys. 12 and M. E. 14.

M. E. 28. *Mechanical Engineering Laboratory*. Tests of air compressor, power and refrigerating plant. Further work in steam and gas engines, written reports.

Required of Seniors in Mechanical Engineering, second semester, 4 hours practice. Prerequisite, M. E. 27.

M. E. 30. *Seminar*. Review of current engineering periodicals, abstracts and reports of papers.

Required of Seniors in Engineering, second semester, 1 hour.

Thesis for Degree of B. S. in M. E. Original investigation of some engineering problem to be decided upon by the Dean.

Required of Seniors in Mechanical Engineering, second semester, 4 hours.

M. E. 32. *Farm Motors*. Study, practice and trouble work of various types of farm motors such as steam and internal combustion engines, refrigerating plant, laboratory and recitations.

Required of Freshmen in Agriculture only, second semester, 2 hours plus 3 hours practice.

M. E. 33. *Free-Hand Drawing*. Free-hand drawing, outline drawing from the blackboard, printing and title designing, perspective and relative proportions of simple objects gradually developing to sketches of more difficult objects, shop sketches with dimensions such as book cases, tables, etc., for use in shop work.

Elective for First Year Preparatory students, first semester, 3 hours practice.

M. E. 34. *Mechanical Drawing*. Instrumental drawing, ink work in lettering, use of instruments, inking, geometric drawing, orthographic projection, assembly and detail drawings of tools, machine parts, etc.

Elective for First Year Preparatory students, second semester, 3 hours practice.

EQUIPMENT.

Mechanical Laboratory. The main equipment in the mechanical laboratory consists of one 40-horsepower return tubular boiler, one 50-horsepower Hoppes feed water heater and purifier, one 30-horsepower Murray-Corliss engine, one 15-horsepower Witte gas engine, one 4-horsepower Fairbanks-Morse oil engine, besides several other gas and oil engines; one 8-horsepower Shipman steam engine and oil burning boiler, one compound two-stage air compressor, one complete $\frac{1}{2}$ -ton refrigerating plant, one Westinghouse turbo generator, one submerged steam condenser, arranged for test purposes. A Duplex steam pump and two $\frac{3}{4}$ -inch injectors are especially arranged for testing. In addition to this the laboratory is well equipped with test apparatus such as indicators, pressure gages, calorimeters, tachometers, weighing tanks, etc. The entire laboratory equipment is for experimental purposes and is so arranged that test work of all descriptions can be conducted with it.

PRACTICAL MECHANICS.

The work in practical mechanics covers the various lines suggested in the following subjects: Machine shops and forging, pattern making and foundry practice, woodwork, shop methods, automobile and gas engine practice, manual training.

M. E. 35. *Woodwork.* Practice in marking, gaging, sawing, planing, advancing as rapidly as possible in the various joints used in carpentry work to making equipment for laboratories and offices.

Required of Freshmen in Engineering, first semester, 4 hours practice.

M. E. 36. *Pattern Making and Foundry Practice.* The practice in this course consists of making patterns from drawings and models, taking into consideration draft, finish and shrinkage. Owing to the limited equipment for foundry practice, this course is covered largely by lectures and trips to foundries with the instructor.

Required of Freshmen in Engineering, second semester, 4 hours practice.

M. E. 37. *Machine Shop and Forging.* This course consists of practice in chipping, filing, screw-cutting, tapen turning, chuck work, shaping, milling, gear cutting and general repair work for the various laboratory machinery and apparatus. The student makes special tools in the forge room, tempers and dresses them for use in the machine shop work.

Required of Sophomores in Engineering, elective for other students with sufficient preparation in Woodwork or General Forging or practical work of like nature, first semester, 4 hours practice.

M. E. 38. *Machine Shop and Forging.* A continuation of M. E. 37.

Required of Sophomores in Mechanical and Electrical Engineering, second semester, 4 hours practice.

M. E. 39. *Shop Methods*. This subject is an advanced course for Mechanical Engineers, taking up the practice in commercial manufacture in all its phases especially from a financial standpoint.

Required of Seniors in Mechanical Engineering, first semester, 2 hours.

M. E. 41, 42. *Manual Training*. This course is to familiarize the student with the use and care of tools. Bench work, together with wood-working machinery constitutes the general outline of the work given. Students making small pieces of furniture such as book cases, small cupboards, music cases, folding screens, etc., may keep same by paying for the amount of material used.

Elective for First Year Preparatory students, first and second semester, 6 hours practice.

M. E. 43, 44. *Automobile and Gas Engine Practice*. This course takes up the construction of gas engines and automobiles, including the starting and lighting systems, magnetos and batteries. This is followed by practical work in repair and operating. Careful records of each student's work is kept in order that he may have systematic work. The course is supplemented by lectures and the text book is used only when necessary.

Elective for Preparatory and Industrial students, 12 hours practice.

EQUIPMENT.

Machine Shop. One 16 in. engine lathe with compound rest and taper attachment, one 14 in. x 6 ft. standard engine lathe, one 12 in. x 5 ft. standard engine lathe, one 13 in. x 5 ft. engine lathe, one 24 in. x 6 ft. planer, one 14 in. shaper, one 22 in. power drill press, one small drill press, one Cincinnati milling machine, one power hack saw, one improved double wheel emery grinder, an assortment of chucks, small tools, etc., one Grenard Arbor press.

Wood Shop. The wood shop equipment consists of 20 benches equipped with all necessary small tools for doing ordinary work, 6-10 in. lathes, one 8 in. x 10 ft. lathe, one combination rip and cut off saw, one Fay and Egan horizontal chisel power mortiser, one Fox trimmer, one large grindstone, one foot power mortising machine, one band saw, one combination Oliver hand plane, one combination emery wheel, grinder and oil stone.

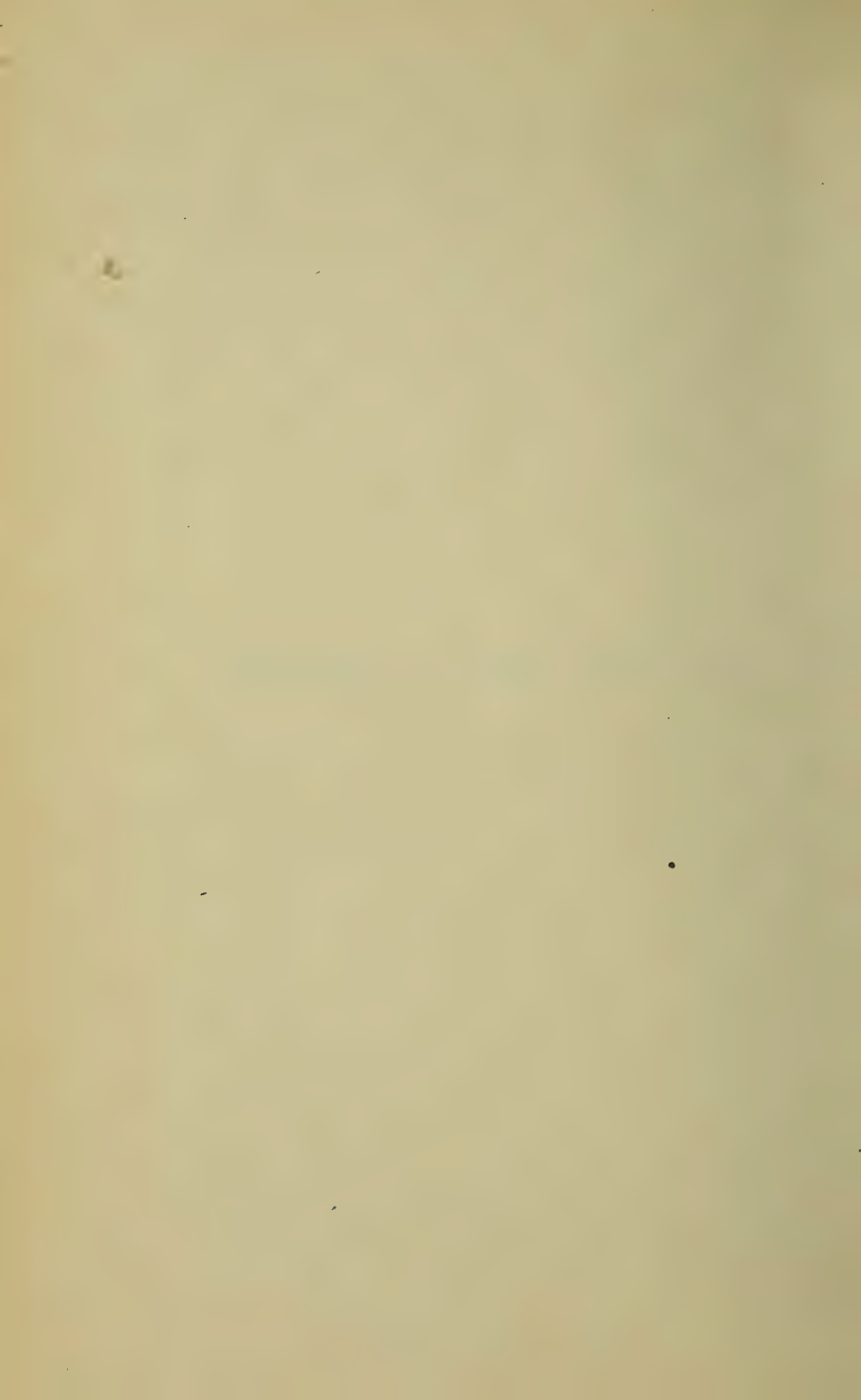
Both the machine shop and the work shop have individual tool rooms where supplies and special tools are kept and issued to the student and recorded on daily tool sheets.

Forge Shop. Twelve down draft forges, twelve anvils, one drill press, one swedge block and all necessary hammers, cutters, hardies and small tools.

Automobile Shop. This shop has machine tool equipment of engine lathe, grinder, speed lathe and drill for carrying on the machine work that comes up in connection with auto repair. Ample floor space is provided for carrying on adjustments and repair of several cars at one time. The shop is well stocked with automobile accessories such as gaskets, lock washers, taper pins, rivets, shim stock, ignition wire, etc. A complete assortment of all kinds of bolts, nuts, and screws used in automobile construction is on hand. A tool room fully equipped with solid and socket wrenches, screw plates, soldering outfits, files of all kinds, and in fact nearly everything that a first class garage tool room has. A standard four cylinder engine with magneto base to which can be tried out all types of ignition systems and also carburetors gives ample opportunity for ignition and carburetor study. An up-to-date electric vulcanizer fitted for both shoe and tube work is also provided.

In addition to this when necessary the equipment of the electrical and mechanical laboratories, machine and wood shops is available for the automobile course students.

The School of General Science



The School of General Science

FACULTY.

- GEORGE EDGAR LADD, President of the College.
- CLARENCE TURPIE HAGERTY, M. S., Professor of Mathematics and Astronomy.
- MERRITT LORRAINE HOBLIT, A. B., Professor of Latin and Modern Languages.
- JOHN HENRY VAUGHAN, A. M., Professor of History and Political Science.
- DAYTON EUGENE MERRILL, M. S., Professor of Biology.
- SHERMAN BROWN NEFF, Ph. D., Professor of English.
- CLARENCE WILLIAM RUSSELL, A. B., Professor of Physical Education.
- LOUIS ALLEN HIGLEY, Ph. D., Professor of Chemistry.
- CHARLES BERRY NEWCOMER, Ph. D., Professor of Latin and Modern Languages.
- SAMUEL PRUITT HERREN, First Lieutenant U. S. Army, Retired, Professor of Military Science and Tactics.
- CHARLES HENRY KUNSMAN, M. S., Professor of Physics.
- MARY FRANCES WINNINGHAM, A. B., Instructor in Mathematics and History.
- FREDERICK CONRAD WERKENTHIN, A. M., Instructor in Botany.
- ZOE DONALDSON, A. M., Instructor in English.
- FLOY EDNA FRENCH, Instructor in English.
- LEVI STANLEY BROWN, B. S., Instructor in Chemistry.
- JOSE QUINTERO, B. S., Instructor in Chemistry.
- GLADYS ELIZABETH CARROON, B. Pd., Instructor in Business Education.
- KATRINA CURTIS MORSE, Instructor in Music.

The School of General Science

The School of General Science comprehends the following departments of instruction:

- I Department of Biology.
- II Department of Business Education.
- III Department of Chemistry.
- IV Department of Economics.
- V Department of English.
- VI Department of Geology.
- VII Department of History and Political Science.
- VIII Department of Latin and Modern Languages.
- IX Department of Mathematics and Astronomy.
- X Department of Military Science and Tactics.
- XI Department of Music.
- XII Department of Physical Education.
- XIII Department of Physics.
- XIV Department of Psychology and Pedagogy.

It is the aim of the School of General Science, in addition to supplementing the courses in agriculture and engineering to offer a liberal college education to students who do not wish to specialize in either of these professions. Abundant opportunity is provided for advanced work in practically all of the fourteen different departments.

DEPARTMENT OF BIOLOGY.

PROFESSOR MERRILL

MR. WERKENTHIN

In the department of biology, instruction is given in the various phases of the biological sciences as a basis for the study of pure science or for the practical application of biology to other lines of work, such as agriculture, household economics, etc. All branches of these last named lines of activity touch directly upon life in its various manifestations, so the need for a thorough understanding of the underlying principles of biology is clearly apparent. The following descriptions of the courses offered in the department will make more evident the close application of biology to the practical side of the student's education.

SECONDARY COURSES.

The work in the preparatory courses in Zoology and Botany is elementary and general in character and designed to present the basic principles of each subject, to introduce the student to a limited number of types of the larger groups of animals and plants, and to give a foundation for the economic consideration of biology.

Biol. 1. *Elementary Zoology*. A course introductory to general biological principles through recitations, observation of animal life in the field, and the study of laboratory material illustrative of elementary morphology. Text-book, Linville and Kelley's *Text-Book in General Zoology*. Professor Merrill.

Elective for Second Year Preparatory students, first semester,
3 hours plus 3 hours practice.

Biol. 2. *Elementary Botany*. An elementary course in botany to follow Biol. 1. It will deal with representatives of the four great groups of the plant kingdom, but mainly with the morphology and physiology of the flowering plants. Plant life in the field will be studied as to factors governing growth

and distribution, and a collection will be made of a limited number of local plants. Text-book, Bergen and Caldwell's *Practical Botany*. Mr. Werkenthin.

Elective for Second Year Preparatory students, second semester, 3 hours plus 3 hours practice.

COLLEGE COURSES.

Besides the required courses of college grade, electives are offered in the various lines of biology. All students electing work must have completed the prerequisites noted under the various courses.

Biol. 11, 12. *General Botany*. The purpose of this course is to give the student a general knowledge of the morphology, evolution, and classification of plants, the structure of cells and tissues, and the physiology of the seed plants. Representative types, in the plant kingdom, beginning with the simple forms, are studied to show the development of the plant body, the increase in specialization of the reproductive process, and the adaptation of plants to dry land conditions. This course is well adapted to the needs of the students of agriculture. Text-book, Bergen and Davis' *Principles of Botany*. Mr. Werkenthin.

Required of all Freshmen, excepting Engineers, first and second semester, 2 hours plus 3 hours practice.

Biol. 13. *General Zoology*. Lecture, text, field and laboratory work, giving deeper consideration of biological principles, morphology, and the ecologic and economic relations of animal life. Text-book Osborn's *Economic Zoology*. Professor Merrill.

Required of all Sophomores, excepting Engineers, first semester, 2 hours plus 3 hours practice.

Biol. 14. *Physiology*. Lectures and recitations on general physiology, based on human physiology and with sufficient

reference to everyday hygiene. In the laboratory the studies of human anatomy from models, casts, charts, etc., will be supplemented by studies of general mammalian anatomy, of slides illustrating the fundamentals of histology, and with exercises to demonstrate certain physiologic processes. Text-book Martin's *Human Body*. .Professor Merrill.

Required of all Sophomores, excepting Engineers, second semester, 3 hours plus 2 hours practice. Prerequisite, Biol. 13.

Biol. 16. *Bacteriology*. Lectures and laboratory work on the principles of sterilization and the technique of isolation, morphology, taxonomy, and physiology of bacteria. Special attention is given to the bacteriological analysis of water, milk and soils. Text-book, Buchanan's *Household Bacteriology*. Mr. Werkenthin.

Required of all Sophomores, excepting Engineers, second semester, 2 hours plus 3 hours practice. Prerequisite, Biol. 11 and 12.

Biol. 17. *Introductory Entomology*. Lectures, recitations, field and laboratory work giving a general knowledge of the structure and habits of the insects and their near allies. Laboratory work on the detailed study of the anatomy of the grasshopper, comparative study of other types, and the collection, pinning and classification of insects will give the student ample opportunity to acquaint himself with many phases of insect life. The economic side of the study will be touched upon. Text-book, Sanderson and Jackson's *Elementary Entomology*. Professor Merrill.

Required of Juniors in Agriculture, elective to others if facilities permit, first semester, 2 hours plus 2 hours practice. Prerequisite, Biol. 13.

Biol. 18. *Applied Entomology*. A continuation of Biol. 17. Further study of comparative types of structure, methods of preservation and preparation for study, and life history studies will be taken up. In addition, much time will be given

to a study of the species affecting crops and live stock in New Mexico and of those infesting the household. Methods for investigation and control of injurious species will be considered. Text-book, Smith's *Economic Entomology*. Professor Merrill.

Required of Juniors in Agriculture, second semester, 1 hour plus 3 hours practice. Prerequisite, Biol. 17.

Biol. 19. *Plant Histology*. This is primarily a laboratory course and is devoted to a consideration of methods in micro-technique, including killing, imbedding, section cutting, staining and mounting of plant tissues, and the use of camera lucida. The preparation of a series of permanent slides illustrating the microscopic structure of plants is a part of the required work. Text-book, Stevens' *Plant Anatomy*. Mr. Werkenthin.

Required of Juniors in Horticulture and Agronomy, elective to others, first semester, 1 hour plus 3 hours practice. Prerequisite, Biol. 11 and 12.

Biol. 20. *Plant Pathology*. A continuation of Biol. 19. Takes up the causes of the diseases of plants and methods of prevention or remedy. The laboratory work will deal largely with the more important diseases of economic plants caused by fungi and bacteria, including the study of symptoms, pathological anatomy, and life history of the causal organisms with the employment of culture methods. Text-book Duggar's *Fungous Diseases of Plants*. Mr. Werkenthin.

Required of Juniors in Horticulture and Agronomy, elective to others, second semester, 2 hours plus 3 hours practice. Prerequisite, Biol. 19.

ELECTIVES.

Biol. 21. *Ornithology*. A general course on habits, distribution, economic importance and taxonomy of the southwestern birds. Bailey's *Handbook of the Birds of Southwestern United States* will be used for identification work. Professor Merrill.

Elective, hours to be arranged. Prerequisite, Biol. 1 or 18.

Biol. 23. *Plant Physiology*. This course will give a more detailed study of the physiology of plants, emphasis being laid upon the relation this study bears to scientific plant production. The laboratory work will consist of experimental study of physiological processes of higher plants. Text-book, Duggar's *Plant Physiology*. Mr. Werkenthin.

Elective, first semester, 1 hour plus 3 hours practice. Prerequisite, Biol. 11 and 12.

Biol. 25, 26. *Systematic Zoology*. An advanced course giving opportunity for further study in the local fauna or in some definite group of animals. Professor Merrill.

Elective, hours to be arranged. Prerequisite, Biol. 13 or 17.

Biol. 27, 28. *Systematic Botany*. An advanced course giving opportunity for further study in the local flora or in some definite group of plants. Mr. Werkenthin.

Elective, hours to be arranged. Prerequisite, Biol. 11 and 12.

Thesis. Opportunity is given to students completing the requirements of biology to prepare theses along lines of selected or assigned problems for investigation.

GRADUATE WORK.

All electives not pursued in undergraduate courses will be accepted as minors for graduate work. For credit in major graduate work a student must do not less than 12 credit hours throughout the year.

EQUIPMENT.

The department of biology occupies five rooms on the second floor of the Science Hall. One large room is used as a general laboratory for zoology, physiology and elementary botany. It is equipped with water and gas and contains a large number of prepared slides, models, casts, skeletons and pre-

served materials for laboratory work in the above subjects, as well as for class demonstration. A model D Balopticon projection apparatus for lantern and microscopic slides, is used to supplement other forms of instruction. A second large room is used for botanical and bacteriological work, and for a research laboratory in pathological work. It is equipped with water, gas, tables, a wide assortment of apparatus, glassware and reagents of various kinds. A small greenhouse in connection with this room gives a few added facilities for work along these lines.

A third room is used for the herbarium. In it are upwards of 35,000 sheets of specimens representing approximately ninety per cent of the flora of New Mexico.

A fourth room contains the ornithological and entomological collections, the United States Geological Survey collection of rocks, several hundred fossils and casts, besides maps and charts, and common minerals that are used in instruction in geology. A small hall in connection with this is used as a sort of insectary.

The fifth room is used as an office for the department and contains the departmental library of over 500 volumes, besides a great many bulletins and pamphlets.

DEPARTMENT OF BUSINESS EDUCATION.

MISS CARROON.

The purpose of the courses in the department of business education is to supply facilities for the training of young people who desire to enter upon business careers. Subjects peculiar to the courses are listed below. These are supplemented with correlated subjects given in other departments.

The department is supplied with sixteen of the latest model typewriters. Machines necessary for the work in office practice are a part of the equipment used by the students.

Credits not in excess of three units will be allowed in stenography and typewriting toward the completion of the regular preparatory course.

B. E. 1. *Typewriting*. This subject consists of practice work in typewriting. The touch system is used and the student is required to transcribe manuscripts and printed matter neatly and free from mistakes at a reasonable rate of speed.

Elective for Preparatory and Industrial students, first semester, 5 or 10 hours practice.

B. E. 2. *Typewriting*. This is a continuation of B. E. 1, and is chiefly devoted to the construction and writing of business letters in conformity with standard forms, and work in tabulated statements.

Elective for Preparatory and Industrial students, second semester, 5 or 10 hours practice.

B. E. 3. *Stenography*. The work in this course is elementary in character, being a thorough study of the principles of shorthand.

Elective for Preparatory and Industrial students, first semester, 5 hours.

B. E. 4. *Stenography*. The work in this course is more

advanced, covering word signs and outline drill as well as introducing a good deal of business and other dictation.

Elective for Preparatory and Industrial students, second semester, 5 hours.

B. E. 5. *Business English*. This course consists of a very thorough discussion of all forms of letters employed in business correspondence, and of points of business etiquette demanded by such correspondence. A part of the time is devoted to business spelling.

Elective for Preparatory and Industrial students, first semester, 5 hours.

B. E. 7. *Business Arithmetic*. The work in this course gives the student a thorough drill in the problems that come up in every day business life. Correct methods in addition, short cuts in multiplication, and check methods of proving results, are made subjects for class drill. Problems involving weights, volumes, dimensions, time, foreign and domestic exchange, are given for oral and written work. The subject of percentage is also thoroughly mastered.

Elective for Second and Third Year Preparatory students and students in Industrial courses qualified to take the work, first semester, 5 hours.

B. E. 8. *Industrial Geography of the United States*. The first part of the course consists in a classification and study of the chief products entering into commerce, the conditions governing their production, and the chief sources of supply. A detailed study is then made of the industrial regions of the United States. The climatic conditions, soil, etc., affecting production are discussed, and agricultural, mining, fishing, and manufacturing industries located. Interstate commerce and our foreign trade are important subjects dwelt upon. A careful study is made of the Southwest, and of New Mexico in particular.

Elective for Second and Third Year Preparatory students and students in Industrial courses qualified to take the work, second semester, 5 hours. Prerequisite, Geol. 1 and 2.

B. E. 10. *Business Law*. The work covers the chief principles underlying the law of contracts in general, negotiable instruments, agency, partnership, corporations, sales, public service companies, insurance and real estate.

Elective for Fourth Year Preparatory students and students in Industrial courses qualified to take the work, second semester, 4 hours.

B. E. 11. *Bookkeeping*. This course, by means of well graded exercises, trains the student in the fundamental principles of accounting.

Elective for Preparatory and Industrial Students, first semester, 5 or 10 hours practice.

B. E. 12. *Bookkeeping*. This course, a continuation of B. E. 11, introduces business practice. The student acts as bookkeeper for various firms, handling all business papers and money.

Elective for Preparatory and Industrial students, second semester, 5 or 10 hours practice.

DEPARTMENT OF CHEMISTRY.

PROFESSOR HIGLEY.

MR. BROWN

MR. QUINTERO

Students desiring to pursue a four years' course in chemistry at this institution may do so by registering in the School of General Science and choosing their electives in the Sophomore, Junior and Senior years from the courses in chemistry which are listed below. Instruction is given by means of lectures accompanied by demonstration experiments, recitations, and laboratory work. In the industrial courses in agriculture and household economics, and the Freshman courses in college laboratory, the work consists of a study of the properties of the elements, demonstrations by actual experiment of the fundamental chemical laws, detection and preparation of simple substances and the separation of inorganic compounds. This laboratory work is followed in the Sophomore, Junior and Senior years by the quantitative analysis of salts, minerals, soils, fertilizers, waters, foods, feeding stuffs, insecticides, fungicides, and various agricultural products.

The instruction in advanced chemistry relates to the manufacturing industries, soils and fertilizers, and the chemistry of plant and animal life.

A year's course is offered to those who wish to become practical assayers. Those students taking this work must also take the courses offered in general chemistry, mineralogy, and geology.

The courses in this department give a general survey of the subject, and furnish a foundation for a practical application in engineering, chemistry and agriculture.

SECONDARY COURSES.

Chem. 1. *Introductory Chemistry.* A course for preparatory students. The work is based upon such texts as

McPherson and Henderson's *Elementary Study of Chemistry and Exercises in Chemistry*.

Required of Fourth Year Preparatory students expecting to enter college courses in Household Economics, elective for other Fourth Year Preparatory students, first semester, 4 hours plus 2 hours laboratory.

Chem. 2. *Introductory Chemistry*. A continuation of Chem. 1.

Required of Fourth Year Preparatory students expecting to enter college courses in Household Economics, elective for other Fourth Year Preparatory students, second semester, 4 hours plus 2 hours laboratory.

COLLEGE COURSES.

Chem. 11. *General Chemistry*. A study of the principles of chemistry as given in McPherson and Henderson's *Course in General Chemistry*.

Required of Freshmen in all college courses, first semester, 3 hours plus 3 hours laboratory.

Chem. 12. *General Chemistry and Qualitative Analysis*. This course is in part a continuation of the previous semester's work in general chemistry, and in addition a course in qualitative analysis is included that consists principally of laboratory experiments in qualitative analysis. Students desiring to take qualitative analysis only, will register for one hour of class work and for three hours of laboratory work. Such students will be given a credit of two hours and a half.

Required of Freshmen in all college courses, second semester, 3 hours plus 3 hours laboratory. Prerequisite, Chem. 11.

Chem. 13. *Organic Chemistry*. A study of the hydrocarbons and their derivatives as outlined in such texts as Stoddard's *Organic Chemistry*.

Required of Sophomores in General Science and Agriculture, first semester, 4 hours. Prerequisite, Chem. 12.

Chem. 14. *Advanced Organic Chemistry*. A continuation of Chem. 13, but with a more comprehensive text.

Elective for Sophomores in General Science, second semester, 2 hours plus 4 hours laboratory. Prerequisite, Chem. 13.

Chem. 15. *Quantitative Analysis*. Mostly laboratory work. Evans' *Quantitative Chemical Analysis* and other suitable texts are used.

Required of students in General Science whose major is Chemistry, first semester, 10 hours laboratory. Prerequisite, Chem. 12.

Chem. 17. *Advanced Qualitative Analysis*. A course in the qualitative analysis of the more difficult substances such as alloys, rocks, minerals, paints, and insoluble compounds.

Required of students in General Science whose major is Chemistry, first semester, 10 hours laboratory. Prerequisite, Chem. 12.

Chem. 18. *Agricultural Chemistry*. Ingle's *Manual of Agricultural Chemistry*. Mostly laboratory work in which the A. O. A. C. methods of the United States Department of Agriculture, Lincoln & Walton's *Agricultural Chemical Analysis*, and such other texts as are best suited to agricultural analysis, are used.

Required of Sophomores in Agriculture, second semester, 2 hours plus 6 hours laboratory. Prerequisite, Chem. 13.

Chem. 19. *Industrial Analysis*. The analysis of various substances such as fuels, minerals, metals, alloys, cements, clays, paints, oils, etc., is included under this heading.

Elective for Juniors and Seniors in General Science with major in Chemistry, first semester, 10 hours laboratory. Prerequisite, Chem. 15.

Chem. 20. *Industrial Analysis*. A continuation of Chem. 19.

Elective for Juniors and Seniors in General Science with major in Chemistry, second semester, 10 hours laboratory. Prerequisite, Chem. 19.

Chem. 21. *Assaying and Metallurgical Analysis*. For the accommodation of those students in the general science course who desire to elect the subject of assaying, a course in dry assaying of gold, silver, and lead ores is offered. During this semester some work is also begun in the wet assay of the commoner metals. Furman's *Manual of Assaying* and Low's *Technical Methods of Ore Analysis* are used as texts.

Elective for Juniors and Seniors in General Science with major in Chemistry, first semester, 10 hours laboratory. Prerequisite, Chem. 12.

Chem. 22. *Assaying and Metallurgical Analysis*. Continuation of Chem. 21, including a study of the methods of analysis of the metals.

Elective for Juniors and Seniors in General Science with major in Chemistry, second semester, 10 hours laboratory. Prerequisite, Chem. 21.

Chem. 23. *Metallurgy*. This is a one semester course in the elementary metallurgy of the useful metals.

Required of Juniors in Mechanical and Electrical Engineering, first semester, 3 hours.

Chem. 25. *Advanced Agricultural Chemistry*. This is a continuation of Chem. 18, and consists of the analysis of soils, waters, feeding stuffs, fertilizers, and various animal and vegetable products. It is intended as an elective for those who wish to fit themselves as agricultural analytical chemists.

Elective for Juniors and Seniors in General Science with major in Chemistry, first semester, 10 hours laboratory. Prerequisite, Chem. 18.

Chem. 27. *Food Analysis*. This is a course to fit the

student for the position of food analyst. It is principally laboratory work in testing the composition of food and its adulteration. It should be preceded or accompanied by a course in microscopy and bacteriology. Leach's *Food Inspection and Analysis*, Publications of the Bureau of Chemistry, United States Department of Agriculture.

Elective for Juniors and Seniors in General Science, first semester, 10 hours laboratory. Prerequisite, Chem. 13.

Chem. 31. *Industrial Chemistry*. This is a study of the chemical principles involved in the various methods for the manufacture of acids, alkalies, glass, cements, alcohol, vinegar, and in the practices followed in similar industries.

Elective for Seniors in General Science with major in Chemistry, first semester, 3 hours plus 4 hours laboratory.

Chem. 32. *Industrial Chemistry*. A continuation of Chem. 31.

Elective for Seniors in General Science with major in Chemistry, second semester, 2 hours.

Chem. 33. *Household Chemistry*. This course is intended for students in household economics. It consists of lectures and laboratory experiments in the chemistry of the household and of food and nutrition. The fundamental principles of organic chemistry are also taken up.

Required of Sophomores in Household Economics, first semester, 3 hours plus 2 hours laboratory. Prerequisite, Chem. 2.

Chem. 34. *Household Chemistry*. A continuation of Chem. 33.

Required of Sophomores in Household Economics, second semester, 3 hours plus 2 hours laboratory. Prerequisite, Chem. 33.

Chem. 35. *Research*. This is a laboratory course in thesis work.

Elective for Seniors in General Science with major in Chemistry, first semester, 4 hours laboratory.

Chem. 36. *Research*. A continuation of Chem. 35, intended to be used to supplement the time allowed for thesis.

Required of Seniors in General Science with major in Chemistry, second semester, 10 hours laboratory.

Chem. 37. *Mineralogy*. This course is principally determinative mineralogy, but crystallography and descriptive mineralogy are also briefly studied.

Required of Seniors in General Science with major in Chemistry, first semester, 6 hours laboratory.

Not all elective courses will be offered in any one year.

DEPARTMENT OF ECONOMICS.

PROFESSOR VAUGHAN.

Econ. 1. *Elementary Economics.* The purpose of this course is to give the student a knowledge of those human relations which have to do primarily with wealth, its production and distribution. The course will include also much material which might be classed under sociology, politics and ethics. The manner of treatment will be simple, concrete and practical. Professor Vaughan.

Elective for Fourth Year Preparatory students, first semester, 4 hours.

Econ. 11. *Economics.* A course devoted to the study of the principles of economics and their application to the conditions and problems of the United States at the present time. An effort will be made to acquaint the student sufficiently with actual economic and industrial conditions in the United States, and particularly in the West, that he may be an intelligent student of public affairs and a useful participant in them. Professor Vaughan.

Required of Juniors in all college courses, first semester, 3 hours.

Econ. 12. *Economic Problems.* A study of the leading problems in the present-day economic life of the people of New Mexico and the United States, with especial reference to the rural population. Professor Vaughan.

Required of Juniors in all college courses except Agriculture and Engineering, second semester, 2 hours.

SOCIOLOGY.

Sociol. 2. *Sociology*. During the second semester the preceding study of economic principles will be made the basis for a more detailed study of the principles of sociology and the most pressing social problems of the present day. Professor Vaughan.

Required of Juniors in all college courses, second semester,
2 hours.

DEPARTMENT OF ENGLISH.

PROFESSOR NEFF.

MISS DONALDSON

MISS FRENCH

The courses in the department of English are designed with two main purposes in view. They are intended, in the first place, to teach the student how to write and speak good English, and in the second place, to cultivate in his mind a taste for the best literature. These two purposes, it is believed, are in keeping with the needs of all students, regardless of the general course they are pursuing.

No student whose knowledge of spelling and grammar is deficient will be admitted to college classes in English, and the department reserves to itself the right to examine in English, should it deem it advisable, any student entering college classes in that subject.

SECONDARY COURSES.

Eng. 1, 2. *First Year Preparatory English.* A thorough drill in the elements of grammar and composition, together with a study of the following classics: *The Merchant of Venice*, *The Deserted Village*, *Treasure Island*, and selections from *The Sketch Book*. Miss Donaldson.

Required of First Year Preparatory students, first and second semester, 5 hours.

Eng. 3, 4. *Second Year Preparatory English.* Grammar and composition. *Julius Caesar*, selections from American poets, *A Tale of Two Cities*, and Burrough's *Birds and Bees*. In connection with the readings from American poets, a short history of American literature is studied. Miss Donaldson.

Required of Second Year Preparatory students, first and second semester, 5 hours.

Eng. 5, 6. *Third Year Preparatory English.* Grammar

and composition. *Macbeth. Idylls of the King. Silas Marner,* and *The Sir Roger De Coverley Papers.* Miss Donaldson.

Required of Third Year Preparatory students, first and second semester, 5 hours.

Eng. 7. 8. *Fourth Year Preparatory English.* Grammar and composition. Newcomer and Andrews' *Anthology of English Literature.* A short history of English literature is studied. Some time is also given during the first semester to bibliography and library practice. Professor Neff and Miss French.

Required of Fourth Year Preparatory students, first and second semester, 5 hours.

Eng. 9. 10. *Special English for Spanish-American Students.* Intended primarily for Spanish-American students who are not yet sufficiently familiar with the English language to qualify for the regularly prescribed courses.

First and second semester, 5 hours.

COLLEGE COURSES.

Eng. 11. 12. *Rhetoric and Composition.* Themes, lectures, recitations. In this course a systematic study is made of the fundamental principles underlying English composition, and a great deal of time is given to actual practice in theme-writing. Some time is also given during the first semester to bibliography and library practice. Professor Neff, Miss Donaldson and Miss French.

Required of Freshmen in all college courses, first and second semester, 3 hours.

Eng. 13. 14. *Advanced English Composition.* Professor Neff.

Required of Sophomores in General Science and Household Economics and elective for other students who have completed in a satisfactory way the work of the Freshman year, first and second semester, 3 hours.

Eng. 15, 16. *English Poets of the Nineteenth Century*. As much as possible of the poetry of the nineteenth century will be read. Special attention will be given to the most important works of Wordsworth, Coleridge, Byron, Shelley, Keats, Tennyson, Browning, Rosetti, Arnold, and Swinburne. Professor Neff.

Required of Juniors in General Science and Household Economics, elective for others, first and second semester, 3 hours.

Eng. 17, 18. *Shakespeare*. Class room study and interpretation of five or six selected plays, and extensive outside reading. Professor Neff.

Required of Juniors in General Science and Household Economics, elective for others, first and second semester, 3 hours.

SUPPLEMENTARY READING.

All students in English courses that are not elective will be required, in addition to their regular class room work, to read and make written reports on at least three books of standard fiction and one book of biography or essays. The object of this requirement is to get students to form the reading habit early, and to direct their reading in a judicious way.

DEPARTMENT OF GEOLOGY.

PRESIDENT LADD

PROFESSOR RUSSELL

The work in geology is taught by lectures and recitations with prescribed text-book reading. Occasional field work is arranged for as often as circumstances will permit.

SECONDARY COURSES.

Geol. 1. *Physiography*. This course is intended to lay a foundation for the student's scientific training by considering the physical agencies at work on the earth. An important part of the course is observing the effect of soil-topography and climate on the distribution of plants and animals, and their relation to human industries. One double period per week is given to laboratory work or to field excursions.

Required of First Year Preparatory students, first semester, 3 hours plus 3 hours practice.

Geol. 2. *Physiography*. A continuation of Geol. 1.

Required of First Year Preparatory students, second semester, 3 hours plus 3 hours practice.

COLLEGE COURSES.

Geol. 11. *General Geology*. This course includes dynamical, structural, and physiographical geology, considerable stress being laid upon rocks, rock-making minerals and their derivative soils. The required field trip will cost each student \$7.50.

Required of Seniors in General Science, Agriculture and Civil Engineering, first semester, 4 hours.

Geol. 12. *Historical Geology*. A detailed treatment of the history of the Earth, together with some elementary work in paleontology.

Required of Seniors in General Science, second semester, 4 hours.

DEPARTMENT OF HISTORY AND POLITICAL SCIENCE.

PROFESSOR VAUGHAN

MRS. WINNINGHAM

SECONDARY COURSES.

Hist. 1. *General History*. A rapid survey of the leading nations of the world from the dawn of recorded history down to the time of Charlemagne, 800 A. D.

Required of Second Year Preparatory students, first semester
5 hours.

Hist. 2. *General History*. Modern history from Charlemagne to the present time.

Required of Second Year Preparatory students, second semester, 5 hours.

Hist. 3. *American History*. A comprehensive survey of British-American colonial history, the Revolution, and the development of the United States. Mrs. Winningham.

Required of Third Year Preparatory students, first semester
5 hours.

Hist. 4. *American Government*. A study of the organization, machinery, and operation of actual government under American conditions. Mrs. Winningham.

Required of Third Year Preparatory students, second semester
5 hours.

COLLEGE COURSES.

Hist. 11. *Modern Europe*. A rapid survey of European history from the beginning of the sixteenth century to the fall of Napoleon. The Reformation and the French Revolution are studied in some detail. Professor Vaughan.

Required of all Juniors, except those in Engineering and Agriculture, first semester, 3 hours.

Hist. 12. *Modern Europe*. A course dealing with the

history of Europe from 1815 to the present time. Special attention is given to the great reform movements of the century and to contemporary government and politics. Professor Vaughan.

Required of all Juniors, except those in Engineering and Agriculture, second semester, 3 hours.

Hist. 13. *American History to 1815*. A survey of the colonial beginnings of the United States, followed by an exhaustive study of the Revolution, the formation of the Union, the organization of the government under Washington, the solution of the most pressing problems of the new nation at home and abroad, and the development of American political, social and economic institutions to the close of the War of 1812. Professor Vaughan.

Required of Seniors in General Science and Household Economics, first semester, 3 hours.

Hist. 14. *American History Since 1815*. Political, social, economic, and constitutional growth of the United States from 1815 to the present time. The rise of the West, slavery, and states' rights, division and reunion, reconstruction, the triumph of nationalism, labor movements, socialism, the Spanish War and imperialism, the United States a World Power, the government of American dependencies. Professor Vaughan.

Required of Seniors in General Science and Household Economics, second semester, 3 hours.

Hist. 16. *New Mexico History and Government*. A systematic study with text-books, assigned readings, and lectures. Professor Vaughan.

Elective, second semester, 3 hours.

POLITICAL SCIENCE.

Pol. Sci. 2. *International Law*. The development of the law of nations, its nature, source, and present status; the equality of states and the doctrine of intervention; the laws of war and peace; the obligations of neutrals; international arbitration. Professor Vaughan.

Elective for Juniors and Seniors by arrangement with instructor, second semester, 3 hours.

DEPARTMENT OF LATIN AND MODERN LANGUAGES.

PROFESSOR HOBLIT.

The aim in the work of this department is to ground the student in the essentials of the several languages—in French and Spanish, with a view to their practical use in reading and speaking. Latin is restricted to the preparatory department. French and Spanish are offered primarily to Freshmen and Sophomores in the college, but Spanish may be elected by strong preparatory students in the third and fourth years.

LATIN.

Lat. 1, 2. *Elementary Latin.* This is a practical course following, in the main, the method employed in the Dorchester School of Massachusetts. The aim is to acquaint the student with the principles underlying all scientific study of language, with special reference to the relations existing between Latin and English. Particular attention is given to the study of word lists with a view to enlarging the pupil's English vocabulary upon the solid basis of an understanding of the principles of derivation.

Elective for First and Second Year Preparatory students, first and second semester, 5 hours.

SPANISH.

Span. 1, 2. *Elementary Spanish.* Grammar and easy reading. Particular attention is given to the fundamentals of grammar and to correct pronunciation. Simple exercises in writing and speaking are introduced as auxiliary to the main purpose of the course.

Primarily for Freshmen; elective for Third Year Preparatory students; first and second semester, 4 hours.

Span. 3, 4. *Spanish Readings.* More difficult selections for reading from modern prose writers and miscellaneous

sources. Translation, grammar review, composition, and easy conversation upon topics suggested by the readings.

Primarily for Sophomores; elective for Fourth Year Preparatory students; first and second semester, 3 hours.

FRENCH.

Fr. 1, 2. *Elementary French.* A course similar in plan to Spanish 1, 2. Students who offer Spanish for entrance will take this course in French; others may choose between French and Spanish.

Primarily for Freshmen; elective for other college students; first and second semester, 4 hours.

Fr. 3, 4. *French Readings.* Similar in plan to Spanish 3, 4. Readings, composition, grammar review.

Primarily for Sophomores; elective for other college students; first and second semester, 3 hours.

DEPARTMENT OF MATHEMATICS AND ASTRONOMY.

PROFESSOR HAGERTY

MRS. WINNINGHAM

Since the work of this institution is largely technical in its character, considerable attention is given to the utility phase of mathematical subjects, but the cultural phase is by no means lost sight of. Astronomy is taught almost wholly for its cultural value.

SECONDARY COURSES.

Math. 1, 2. *Elementary Algebra*. The connection of algebra with arithmetic is kept constantly before the student, and the solution of an unusually large number of practical problems constitutes the main part of the work, since the purely theoretical side of the subject receives full consideration later in the advanced algebra. The text-book completed is Slaught and Lennes' *Elementary Algebra*. Mrs. Winningham.

Required of First Year Preparatory students, first and second semester, 5 hours.

Math. 3, 4. *Plane Geometry*. In this course Wentworth's *Plane Geometry* is completed, including about five hundred of the original exercises. Mrs. Winningham.

Required of Second Year Preparatory students, first and second semester, 5 hours.

Math. 5. *Solid Geometry*. In this course Wentworth's *Solid Geometry* is completed, including many of the original exercises. Professor Hagerty.

Required of Third Year Preparatory students expecting to enter college courses in General Science or Engineering, first semester, 5 hours.

Math. 6. *Advanced Algebra*. This course includes a review and a more complete treatment of all topics of the first

year course in algebra, and special emphasis is given the following: involution, evolution, quadratic equations, radicals, imaginary and complex numbers, ratio, proportion, variation, and theory of exponents, including logarithms. The text-book used is Slaughter and Lennes' *Intermediate Algebra*. Professor Hagerty.

Required of Third Year Preparatory students expecting to enter college courses in General Science or Engineering, second semester, 5 hours.

Math. 7. *Higher Arithmetic*. This course consists of a general review, and a consideration of topics not previously studied. The applied problems are of a practical nature, referring largely to questions arising in the laboratory and in ordinary commercial life. Lyman's *Advanced Arithmetic* is the text-book used. Professor Hagerty.

Elective for Fourth Year Preparatory students, first semester, 5 hours.

COLLEGE COURSES.

Math. 11, 12. *College Algebra*. This course includes a review of quadratics and complex numbers and covers the following subjects: progressions, inequalities, undetermined coefficients, indeterminate equations, the binomial theorem for all rational exponents, permutations and combinations, variables and limits, series, and the elements of the theory of equations. Professor Hagerty.

Required of Freshmen in General Science and Engineering, first and second semester, 2 hours.

Math. 13. *Plane Trigonometry*. In this course both the theoretical and practical phases receive careful consideration. Many formulas are developed and the applications cover a wide field, including problems in heights, distances, surveying, physics and astronomy. Professor Hagerty.

Required of Freshmen in General Science and Engineering, first semester, 3 hours.

Math. 14. *Plane Analytic Geometry*. Study in detail of the following subjects is made: Straight line, circle, transformation of coordinates, parabola, ellipse, hyperbola, general equations of the second degree, and a few of the higher plane curves, using both rectangular and polar coordinates. Professor Hagerty.

Required of Freshmen in General Science and Engineering, second semester, 3 hours.

Math. 15. *Solid Analytic Geometry*. The following subjects are studied: coordinates in space, loci and their equations, plane and straight line, quadratic surfaces, a few space curves, tangent lines and planes. Professor Hagerty.

Required of Sophomores in Engineering, first semester, 1 hour.

Math. 16, 17. *Spherical Trigonometry*. This course covers the proof of the fundamental formulas of right and oblique triangles and applications. Professor Hagerty.

Elective for students who have had Math. 13, first or second semester, 1 hour.

Math. 19, 20. *Differential and Integral Calculus*. The topics treated in this course are those usually taken up in accordance with well established usage. Many practical problems in analytic geometry and mechanics are solved by the students in order to fix the principles in their minds and to maintain their interest. Campbell's *Differential and Integral Calculus* is the text-book used. Professor Hagerty.

Required of Sophomores in Engineering, first and second semester, 4 hours.

ASTRONOMY.

Astron. 1, 2. *General Astronomy*. In this course are studied not only astronomical facts and principles, but also the methods by which the facts have been ascertained. The work is conducted by lectures, recitations, and solar and night obser-

uations. The determination of the meridian, latitude, and longitude are among the practical problems assigned, and by means of the instruments at the disposal of the students quite accurate results are obtained. Young's *Manual of Astronomy* is the text-book used. Professor Hagerty.

Required of Juniors in General Science, first and second semester, 2 hours plus 1 hour practice.

EQUIPMENT.

This department has a 6-inch portable, equatorially mounted refracting telescope, a transit theodolite having an 8-inch horizontal circle reading to 10" and a 6-inch vertical circle reading to 30", an 18-inch celestial globe, a Bausch and Lomb-Zeiss stereobinocular magnifying $7\frac{1}{2}$ diameters, two star lanterns with slides, star atlases, planisphere, 18-inch slated globe, a set of stereoscopic views of the figures for the theorems in solid geometry, the Ross mensuration blocks and dissected geometrical solids, a Thatcher's calculating instrument, protractors, etc.

The department library contains many valuable books of reference, and receives several periodicals.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

PROFESSOR HERREN.

The primary object of this department is to furnish the country each year with a class of young men who are fitted to become efficient officers of volunteers in time of war.

For this reason the department is fostered by the United States government, and is practically maintained by it without expense to the College.

The professor is an officer of the army detailed for this duty by the President of the United States, and the equipment—of the value of about \$5,000—is issued to the College by the War Department. It includes two pieces of artillery with their accompanying limbers, cadet rifles and bayonets, belts, and a yearly allowance of ammunition for target practice.

The military course is required to be taken by all physically qualified male students of the college, preparatory or industrial courses, in regular or special classes, except Juniors, Seniors, and graduate students.

The department offers the following comprehensive course of instruction:

Practical. Infantry drill regulations, through the school of the battalion, the ceremonies of battalion parade, review and inspection, guard mounting, escort of colors, marches, outposts, advance and rear guards, etc.; field service regulations; manual of guard duty; firing regulations for small arms, with gallery and target practice. Whenever practicable an annual encampment of a week's duration will be held. All students in the military department will be required to attend.

Theoretical. This includes the portions of the above subjects covered by the practical instruction, and may be supplemented by lectures.

Aside from its benefit to the country in time of war this course is of great and immediate value to the individual student. The drills and exercises are mild forms of physical training, giving an erect and graceful carriage and correcting the bad habits of body to which students are prone. But their chief value to the student lies in the mental and moral discipline they afford, for, by their practice, he acquires the habit of self control, respect for authority, and the fitness to exercise it.

Uniform. Each student classified for the military course will be required to deposit with the Registrar at the time of registration the price of the adopted uniform. The uniform of a cadet consists of the regulation cap, an olive drab coat, two olive drab shirts, two pairs of olive drab breeches, and army regulation leggins. Tan shoes are required to go with the uniform.

The uniform of the college must be worn by all students in the military department on regular school days and at such other times as the commandant may direct. It shall be worn in military manner, complete, and not combined with articles of civilian clothing. Other male students may wear the uniform under regulations prescribed for those students in the military department except that insignia of rank in the cadet corps must be omitted. This prohibition does not apply to special, social, or ceremonial occasions.

DEPARTMENT OF MUSIC.

MISS MORSE.

This institution offers excellent facilities for the study of music. The work of the department includes classes in theory of music, harmony, girls' glee club, mixed chorus, boys' and girls' quartettes, and private lessons in piano, voice, and violin.

Girls' Glee Club. All girls with necessary musical ability are urged to join this society which meets once a week. The greater part of the year's work consists in studying two, three and four part harmony in choruses.

Mixed Chorus. A mixed chorus of ten voices meets once a week to work on choruses.

Boys' and Girls' Quartettes. Both boys' and girls' quartettes are selected at the beginning of the year from a list of eligible students. Each organization meets once a week working largely on choruses for recital purposes.

The course in piano music varies to meet the need of each individual student. The training is not alone for the acquirement of finger dexterity, but for a more comprehensive idea of pianoforte music.

The college owns five pianos which are at the disposal of students taking private lessons.

The charge for private lessons in piano, one lesson a week for one semester, is \$18.00.

College students whose courses admit of electives, may receive credit for their work when two private lessons a week are taken and not less than two hours a day are devoted to practice. A maximum of credit not to exceed ten units will be allowed toward college graduation,—a unit to be the equivalent of one hour a week of music lessons for eighteen weeks. In every case where college credit is desired, application should be made at the beginning of the session.

DEPARTMENT OF PHYSICAL EDUCATION.

PROFESSOR RUSSELL.

As a preliminary to the work of this department all students, both boys and girls, are required to take a physical examination consisting of measurements and strength tests. This examination is given at the beginning of each term so students in regular attendance at the institution will have a direct check upon their physical development. It also affords the director a basis for the selection of material for the various athletic teams.

For the girls gymnasium classes are conducted four days each week. All girls are required to attend at least three days per week. Part of each period is devoted to class exercises of the body building type, and part to play. During the play time such games as corner ball, end ball, volley ball, punch ball, and baseball are played, also some time is given to folk dancing. In addition to this work in classes for girls the college and preparatory department are each represented by a basketball team which plays outside games. Two first-class tennis courts are also reserved for the use of the girls.

For the boys the work is entirely elective and our motto is "Something for every boy and every boy into something." Leagues are formed to play such games as basketball and baseball. Every boy in college is assigned to play on one of the teams. Then regular practice hours are given to each team so that every boy has a chance to get in the game. For boys who become decidedly proficient in the playing of the different games we have the college teams which compete against outside organizations. Our football, basketball, baseball, track and tennis teams are a credit to the College.

DEPARTMENT OF PHYSICS.

PROFESSOR KUNSMAN.

The method of instruction in this department is by lectures, recitations and laboratory exercises.

SECONDARY COURSES.

Phys. 1. *Elementary Physics*. Introductory principles of mechanics and heat as outlined in Millikan and Gale's *First Course in Physics*. A list of laboratory experiments, correlated with the text, is completed by each student.

Required of Fourth Year Preparatory students expecting to enter college courses in General Science or Engineering, first semester, 3 hours plus 3 hours laboratory.

Phys. 2. *Elementary Physics*. Continuation of Phys. 1. Electricity, sound and light.

Required of Fourth Year Preparatory students expecting to enter college courses in General Science or Engineering, second semester, 3 hours plus 3 hours laboratory. Prerequisite, Phys. 1.

COLLEGE COURSES.

Phys. 11. *College Physics*. Lectures, recitations and assigned problems in mechanics and heat. This course contains a technical treatment of the subject and is particularly designed to meet the needs of students of engineering. Text, Anderson's *Physics for Technical Students*. Laboratory exercises are selected from Millikan and Jamison's manuals.

Required of Sophomores in General Science and Engineering, elective for others, first semester, 3 hours plus 4 hours laboratory.

Phys. 12. *College Physics*. A continuation of Phys. 11. Light, sound and electricity.

Required of Sophomores in General Science and Engineering, elective for others, 3 hours plus 4 hours laboratory. Prerequisite, Phys. 11.

Phys. 13. *Agricultural Physics*. This course is designed to meet the need of agricultural students. It treats of the simpler machines, of the mechanics of gases in connection with weather phenomena, and of liquids in capillarity and osmosis. The fundamental ideas of force, work and power are developed with reference to the various appliances used on the farm. Text, Black and Davis' *Practical Physics*.

Required of Freshmen in Agriculture, first semester, 2 hours plus 2 hours laboratory.

Phys. 14. *Household Physics*. A course of lectures and demonstrations in which the principles involved in appliances of the household are explained and illustrated. The work in light includes a study of illumination, the use of optical instruments, and a brief treatment of photography. Text, Lynde's *Physics of the Household*.

Required of Freshmen in Household Economics, second semester, 2 hours plus 2 hours laboratory.

DEPARTMENT OF PSYCHOLOGY AND PEDAGOGY.

PROFESSOR VAUGHAN.

Psych. 11. *General Psychology*. This course will cover the elements of psychology in a scientific manner suited to the ability of advanced students and without special reference to the application of psychology to teaching. It is primarily intended for general culture and to enable the student to understand himself and his own mental processes. Professor Vaughan.

Required of Seniors in General Science and Household Economics, first semester, 4 hours.

PEDAGOGY.

Ped. 2. *Rural Education*. A course in the principles and practice of teaching and school management, with particular reference to the problems of the rural and village schools of New Mexico and the introduction and teaching of agriculture and other industrial subjects. Professor Vaughan.

Required of Seniors in Household Economics, elective for all students who are preparing to teach, second semester, 4 hours.

Catalog of Students

1916-1917

Seniors

Briggs, Leslie Palmer	Albuquerque, N. M.
Buvsens, Richard Henry	Mesilla Park, N. M.
Chaffee, Charles Livingston	El Paso, Texas
Cox, Lester Lyle	Hagerman, N. M.
Davis, Nina Elsie	Mesilla Park, N. M.
Fulghum, Mildred Elizabeth	State College, N. M.
Hulbert, Lureen Walker	Belen, N. M.
Humble, Cleave	El Paso, Texas
Jackson, Oral Kipling	Ft. Stockton, Texas
Jourdan, Arthur Deidrich	State College, N. M.
Locke, Lowell	Mesilla, N. M.
Meerscheidt, Hilmar Frank	San Antonio, Texas
O'Boyle, Anthony Francis	Rice, Ariz.
Pohl, Richard Robert	Belen, N. M.
Rea, Casper Conrad	Riddle, N. M.
Redd, John Charles	Las Cruces, N. M.
Stirling, Stuart	Dayton, N. M.
Taylor, Lytton Raymond	Las Cruces, N. M.
Thomas, Willis	Gallup, N. M.
Vickers, Gates Stirling	Deming, N. M.
Wharton, James Edward	Douglas, Ariz.

Juniors

Archer, William Andrew	Mesilla Park, N. M.
Babcock, George Lewis	Kelly, N. M.
Blackwell, Milton Sylvester	Mogollon, N. M.
Brownlee, Blanche	Las Cruces, N. M.
Buell, Grace Eleanor	Mesilla Park, N. M.
Buvsens, Margaret Smart	Mesilla Park, N. M.
Campbell, Lawrence Clifford	Ft. Davis, Texas
Carroon, William Evan	Santa Fe, N. M.
Clarke, William Norman	Clarksville, Md.
Clayton, Rose Walker	Mesilla Park, N. M.
Coats, Alva	Mesilla Park, N. M.
Cormany, Charles Evans	Las Cruces, N. M.
Gardner, William Ansel	Berino, N. M.
Garrett, Chester	Portales, N. M.
Hollinger, Edwin Condit	Union City, Ind.
Kerr, Grayson Alexander	Venice, Ill.
Kinsell, Dillman Condon	Santa Fe, N. M.

Ladd, Shaler	Mesilla Park, N. M.
Rentfrow, Martina Bendette	Mesilla Park, N. M.
Sinnock, William Pike	Las Cruces, N. M.
Woodson, Corinne Lee	Las Cruces, N. M.

Sophomores

Bennett, Hilary	Las Cruces, N. M.
Bousman, Tracy	Farmington, N. M.
Bowers, Vernice Norma	Albuquerque, N. M.
Carson, Ernest Harry	Hope, N. M.
Foster, Robert Geib	Raton, N. M.
Hale, Hugh Douglas	Lexington, N. C.
Heilman, Karl Kenneth	State College, N. M.
Herbert, Guy Hammond	Roswell, N. M.
Hill, Julia Augusta	Mesilla Park, N. M.
James, William Harold	Lordsburg, N. M.
Kronig, Louis	Watrous, N. M.
Ledford, Bessie James	Mesilla Park, N. M.
Marmon, Kenneth	Laguna, N. M.
Omari, Abraham	State College, N. M.
Ousterhaut, Lawrence Sherburne	Hondale, N. M.
Powell, Annie	Mesilla Park, N. M.
Rea, Joyce Kitty	Riddle, N. M.
Rentfrow, Era Hall	Mesilla Park, N. M.
Rentfrow, Doyle	Mesilla Park, N. M.
Rooney, Vernon Lonnie	Ft. Stockton, Texas
Smith, Howell Allie	State College, N. M.
Smith, Nellie Chadbourne	Santa Rosa, N. M.
Stablein, Lawrence Raymond	Las Cruces, N. M.
Stewart, Alice Eva	Mesilla Park, N. M.
Stuart, Esther Irene	Mesilla Park, N. M.
Thaxton, Robert	Mesilla Park, N. M.
Williams, Jesse	Ft. Stockton, Texas

Freshmen

Bean, Roy Paul	Las Cruces, N. M.
Berrier, Florence	Mesilla Park, N. M.
Boan, Ruth Harriett	Raton, N. M.
Cox, Albert Bascom	Las Cruces, N. M.
Day, Hester Sargent	Las Cruces, N. M.
Denton, Sherman James	Raton, N. M.
Elwood, Robert James	Las Cruces, N. M.
Foster, William Bennett	State College, N. M.
Goebel, Dorothy	Hurley, N. M.
Hagerty, Mary Elizabeth	State College, N. M.
Henderson, Finis Ewing	Portales, N. M.
Hill, Walter Bacon	Mesilla Park, N. M.
Hollinger, Martha Elma	Union City, Ind.
Howard, Claude Close	Deming, N. M.
Howarth, Barbara	Raton, N. M.
Howarth, Anna	Raton, N. M.
Le Grand, George Frank	Hereford, Texas
Lockhart, Joseph William	Houston, Texas

Mayes, Dan Robert	Oscura, N. M.
Minnegerode, Karl	Las Cruces, N. M.
Nichols, Alva	Tularosa, N. M.
Osuna, Pedro	Albuquerque, N. M.
Overstreet, Frank Allen	Ft. Sumner, N. M.
Pacheco, Teodosio	Sapello, N. M.
Quesenberry, Florence Bradus	Las Cruces, N. M.
Quint, Atherton Wales	Pasadena, Cal.
Robbins, Leon Alex	Deming, N. M.
Robbins, John	Mesilla Park, N. M.
Robertson, John Milton	Silver City, N. M.
Robertson, Roy	Gunsight, Texas
Smith, Harry	Big Springs, Texas
Taylor, Susie Lewis	State College, N. M.
Tweed, John Sam	Alamogordo, N. M.
Worcester, Richard	El Paso, Texas

Fourth Preparatory

Blazer, Noel Edison	Mescalero, N. M.
Buell, Arthur Warren	Mesilla Park, N. M.
Bunting, Harry	Roswell, N. M.
Burlingame, Paul James	Magdalena, N. M.
Conway, Harry Ramsey	Mesilla Park, N. M.
Costa, Frank Paul	Madrid, N. M.
Harris, Hawes Coulbern	El Paso, Texas
Hines, Gladys Marie	Mesilla, N. M.
Jackson, Henry Leonard	Ft. Stockton, Texas
Knight, Marie Elizabeth	Lake Valley, N. M.
Ladd, John Gardner	Mesilla Park, N. M.
McDowell, Isal Marie	Mesilla Park, N. M.
Oberholser, Edna	Hurley, N. M.
Ricketson, Nona Vilanty	State College, N. M.
Shirley, Johnnie Edgar	Estancia, N. M.
Williams, Esther May	Garfield, N. M.

Third Preparatory

Arnett, George Edward	Lordsburg, N. M.
Brooks, Albert Sidney	Mesilla Park, N. M.
Bunting, Will	Roswell, N. M.
Carpenter, Alva	Anthony, N. M.
Doss, Judson Evan	Artesia, N. M.
Evans, Neil	Mesilla Park, N. M.
Fantacci, Carlo	Roswell, N. M.
Goebel, Harry Wynne	Hurley, N. M.
Hagerty, Francis Edward	State College, N. M.
Henschel, Harvey Doughty	Las Cruces, N. M.
Hill, Dean Frederick	Mesilla Park, N. M.
Hoffman, Walter Ralph	Douglas, Ariz.
Hyland, Harlow	State College, N. M.
Robbins, Dorothy Mary	Mesilla Park, N. M.
Stoes, Phillip Edward	Las Cruces, N. M.
Taylor, May Ellen	Lake Valley, N. M.
Walters, Leon	Roswell, N. M.

Yard, James Steven	Reserve, N. M.
Tharton, Earl Emsly	Douglas, Ariz.
Williams, Helen Louise	Santa Fe, N. M.

Second Preparatory

Alexander, Silas	Hillsboro, N. M.
Berkshire, Milton	Estancia, N. M.
Boats, Maurice Eldridge	Mogollon, N. M.
Bowell, Richard Chester	Hartford, Conn.
Bibney, Reuben Leo	Central, N. M.
Bonzales, Juan	Mesilla Park, N. M.
Breen, Ernest	Estancia, N. M.
Boddard, Mildred	Mesilla Park, N. M.
Boddard, Velma Edith	Mesilla Park, N. M.
Bamilton, Chester Decatur	Ft. Sumner, N. M.
Bamilton, John Foster	Ft. Sumner, N. M.
Bawk, Mitchell Hugh	Anthony, N. M.
Bines, Fred Phillip	Mesilla, N. M.
Bilgore, James	Berino, N. M.
Badd, Dorothy Devereaux	Mesilla Park, N. M.
Bathes, Donald	State College, N. M.
McKowen, Emmet	Rincon, N. M.
Bills, Jessie Charlotte	Las Cruces, N. M.
Bossmann, Francis	Rincon, N. M.
Bamirez, Juana	Mesilla Park, N. M.
Bandall, Martin	Lordsburg, N. M.
Bicketson, Anna Maude	State College, N. M.
Bmith, Fred Ross	Tucumcari, N. M.
Batum, John Taylor	Tatum, N. M.
Binoco, Ignacio	El Paso, Texas
Ban Noy, Luis	Thatcher, Ariz.
Balker, Pickard Cady	Estancia, N. M.
Borchester, Barbara	El Paso, Texas

First Preparatory

Allen, Milton	Magdalena, N. M.
Ackett, John	Hope, N. M.
Arooks, William Winfield	Shafter, Texas
Athfield, Harvey Silas	Dos Cabezos, Ariz.
Aone, John Ernest	Lordsburg, N. M.
Ae Baca, Vito	Las Vegas, N. M.
Avans, John Mulford	Mesilla Park, N. M.
Araham, Neil Orval	Cutter, N. M.
Araves, George Cockefair	Maxwell, N. M.
Aullahorn, Cecil John	Amarillo, Texas
Aaile, Allen Grant	Mountain Park, N. M.
Aammel, Francis Ellen	Lake Valley, N. M.
Aardin, Millard Charles	Lordsburg, N. M.
Aarris, Frank Pitman	El Paso, Texas
Autchings, George	Albuquerque, N. M.
Ackson, Wilbur Lawrence	Lordsburg, N. M.
Aumes, Clifford Edward	Lordsburg, N. M.
Ahnson, Willie Lee	Ft. Stockton, Texas

Kloss, Phillips Wray	Webster Groves, Mo.
Le Brun, Edward	Belen, N. M.
Martin, Robert Daniel	Pena Blanca, N. M.
Matthew, Cree Chandos	Deming, N. M.
McDonald, Tom Taylor	White Signal, N. M.
McDonald, Bartley Byrne	White Signal, N. M.
McLenden, Ada	Cutter, N. M.
McNew, Robert James	Oro Grande, N. M.
Mills, Charles Albert	Las Cruces, N. M.
Plowman, Paul Willie	Anthony, N. M.
Ricketson, Alle Etta	State College, N. M.
Severns, Frank Clarence	Belen, N. M.
Stith, Lilly	McDonald, N. M.
Smith, Edna Aileen	Cloudcroft, N. M.
Strozi, Allie	Magdalena, N. M.
Teel, Andy	Hope, N. M.
Tinoco, Francisco	El Paso, Texas
Ward, Homer Richard	Carlsbad, N. M.
Wayne, James Gentry	Mesquite, N. M.
Wilkins, Clayton	El Paso, Texas
Vigil, Apolonis	Clayton, N. M.
Yoast, Eva Joanna	Cutter, N. M.

Business

Kelly, Lucy Radclief	Magdalena, N. M.
Kelly, Anna Laura	Magdalena, N. M.
McWhorter, Leslie	State College, N. M.
Medellin, Marta	Mesilla Park, N. M.
Niccols, Zela Irene	Mesilla Park, N. M.

Special Industrial

Barra, Julio B. Y.	Morenci, Ariz.
Barraza, Jose	Mesilla, N. M.
Butler, Noberto	Mesilla, N. M.
Elias, Enrique	Las Cruces, N. M.
Elias, Simon	Las Cruces, N. M.
Elias, Guillermo	Las Cruces, N. M.
Jackson, Barney	Ft. Stockton, Texas
Limon, Placido	Mesilla, N. M.
Loya, Rafael Garcia	Chihuahua, Mexico
Maynes, Joaquin	Las Cruces, N. M.
Moore, Willie Lee	Ft. Stockton, Texas

Short Courses

Black, William Berry	McDonald, N. M.
Elser, B. F.	Galion, Ohio
Freudenthal, Louis Edwin	Las Cruces, N. M.
Hadley, Hiram	Mesilla Park, N. M.
Heilman, E. J.	State College, N. M.
Herren, Frank Howard	La Mesa, N. M.
Herren, Albert	La Mesa, N. M.
Hess, B. F.	Mesilla Park, N. M.
Ladd, Mary H.	Mesilla Park, N. M.

Locke, Mrs. C. E.	Mesilla, N. M.
Mitchell, J. P.	Las Cruces, N. M.
Phelps, George Ralph	State College, N. M.
Preston, Edith	Mesilla Park, N. M.
Robbins, Mrs. J. C.	Mesilla Park, N. M.
Seward, Sarah Louise	Long Beach, Cal.
Seward, A. L.	Long Beach, Cal.
Stevenson, Mrs. John	Mesilla Park, N. M.
Stith, Hogan	McDonald, N. M.
Stith, Mrs. C. H.	Las Cruces, N. M.
Tarbel, Mrs. W. E.	State College, N. M.

Music

Allen, Milton	Magdalena, N. M.
Barnes, Dorothy	State College, N. M.
Berrier, Anna	Mesilla Park, N. M.
Carroon, Gladys	State College, N. M.
Hill, Julia	Mesilla Park, N. M.
Kelly, Anna Laura	Magdalena, N. M.
Kelly, Lucy Radclief	Magdalena, N. M.
Knight, Marie Elizabeth	Lake Valley, N. M.
Rentfrow, Era	Mesilla Park, N. M.
Smith, Aileen	Cloudcroft, N. M.
Taylor, May Ellen	Lake Valley, N. M.
Toast, Eva Joanna	Cutter, N. M.

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Farmers' Week Enrollment

Baker, A. M.	Las Cruces, N. M.
Barber, Paul B.	Las Cruces, N. M.
Barker, Percy	Mesilla Park, N. M.
Bartlett, Charles T.	La Mesa, N. M.
Beaty, Orrin	Clayton, N. M.
Bennett, H. F.	Las Cruces, N. M.
Berrier, Steth	Las Cruces, N. M.
Blackburn, M. J.	Espanola, N. M.
Bossyns, Frank C.	Las Cruces, N. M.
Brown, C. W.	Telles, N. M.
Buvsens, R. H.	Mesilla Park, N. M.
Buell, W. C.	Mesilla Park, N. M.
Carlyle, W. L.	Stillwater, Okla.
Chaves, J. A.	Algodones, N. M.
Clarke, Geo. M.	Mesilla Park, N. M.
Cole, L. L.	Hill, N. M.
Collin, H. A.	Las Cruces, N. M.
Elser, D. F.	Galion, Ohio
Elliott, J. W.	Fabens, Texas
Ellsworth, Robert	Las Cruces, N. M.
Evans, J. H.	Mesilla Park, N. M.
Eylar, A. S.	La Mesa, N. M.
Farrell, George E.	Washington, D. C.
Feller, William	Las Cruces, N. M.
Fite, Clarence	Hope, N. M.
Floyd, W. R.	San Miguel N. M.
Gonzales, M. R.	Las Vegas, N. M.
Hadley, Hiram	Mesilla Park, N. M.
Haines, J. E.	Hill, N. M.
Hart, R. A.	Salt Lake City, Utah
Harwell, Rolland	Estancia, N. M.
Henley, F. O.	Las Cruces, N. M.
Higden, J. H.	Las Cruces, N. M.
Hill, Fred	Mesilla Park, N. M.
Hill, C. L.	Hill, N. M.
Hoagland, E. H.	Las Cruces, N. M.
Holloman, Dean	Artesia, N. M.
Hookland, S. S.	Mesilla Park, N. M.
Kelleher, William	Albuquerque, N. M.
Knorr, William	Carlsbad, N. M.
Kull, Winthrop	La Mesa, N. M.
Lester, F. E.	Mesilla Park, N. M.
Locke, C. E.	Mesilla Park, N. M.
Lockhart, G. L.	Las Cruces, N. M.
Lowrey, D. A.	Las Cruces, N. M.
Martineau, V. L.	Raton, N. M.

Matheson, Duncan	Mesilla Park, N. M.
Marshall, T. J.	Laguna, N. M.
May, W. H.	Mountain Park, N. M.
McAdams, E. O.	Las Cruces, N. M.
McDonald, L. R.	Albuquerque, N. M.
McDowell, H. U.	Mesilla Park, N. M.
McGregor, Grant	Lake Valley, N. M.
Morrow, T. L.	Las Cruces, N. M.
O'Hara, M. C.	Las Cruces, N. M.
Paden, J. S.	Las Cruces, N. M.
Palmer, William Jr.	Las Cruces, N. M.
Phelps, J. L.	Albuquerque, N. M.
Poe, James R.	Mesilla Park, N. M.
Potter, J. Volney	La Mesa, N. M.
Pringle, M. B.	Hondale, N. M.
Quintio, F.	Las Cruces, N. M.
Ramirez, J. M.	Mesilla Park, N. M.
Rigney, William	La Mesa, N. M.
Robbins, J. C.	Mesilla Park, N. M.
Roach, Paul	Hill, N. M.
Seward, A. L.	Long Beach, Cal.
Sherwood, Carl	Estancia, N. M.
Smart, J. W.	Pittsfield, Ill.
Smith, L. T.	Mesilla Park, N. M.
Stevenson, J. H.	Mesilla Park, N. M.
Stewart, S. P.	Mesilla Park, N. M.
Stewart, H. C.	Albuquerque, N. M.
Stith, C. H.	Las Cruces, N. M.
Strode, W. C.	Las Cruces, N. M.
Strong, E. J.	Albuquerque, N. M.
Taylor, J. W.	Las Cruces, N. M.
Thaxton, T. B.	Mesilla Park, N. M.
Trujillo, M.	Taos, N. M.
Trumbull, R. S.	El Paso, Texas
Waldron, W. J.	Artesia, N. M.
Williams, Geo. M.	Las Cruces, N. M.
Williams, J. E.	Dona Ana, N. M.
Williams, Dan W.	Las Cruces, N. M.
Williamson, Ben E.	Buhl, Idaho
Williamson, G. D.	La Mesa, N. M.
Barber, Mrs. Paul B.	Las Cruces, N. M.
Barnes, Inez S.	State College, N. M.
Blackwood, Una	Roswell, N. M.
Boan, Ruth	State College, N. M.
Bowen, Mrs. M. S.	State College, N. M.
Bowman, Elma	Las Cruces, N. M.
Bradford, Francis	Las Cruces, N. M.
Broadus, Mrs. L. A.	Las Cruces, N. M.
Brownlee, Luella	Las Cruces, N. M.
Brownlee, Mrs. A. D.	Las Cruces, N. M.
Buerkin, Augusta	Quincy, Ill.
Burke, Mrs. H. M.	Las Cruces, N. M.
Burke, Helen	Las Cruces, N. M.
Buvens, Margaret	Mesilla Park, N. M.

Buvenus, Mrs. R. H.	Mesilla Park, N. M.
Clark, Mrs. Geo. M.	Mesilla Park, N. M.
Clary, Mrs. Hugh	State College, N. M.
Coaney, Katie	Las Cruces, N. M.
Collin, Mrs. H. A.	State College, N. M.
Conway, Mrs. W. T.	Mesilla Park, N. M.
Cooley, Mrs. A. C.	State College, N. M.
Day, Mrs. Grace E.	Las Cruces, N. M.
Eppelsheimer, Mrs. Frank	St. Louis, Mo.
Evans, Kate M.	Mesilla Park, N. M.
Eylar, Mrs. A. S.	La Mesa, N. M.
Foster, Elizabeth	Las Cruces, N. M.
Foster, Mrs. O. A.	Las Cruces, N. M.
Frenger, Mrs. Geo. W.	Las Cruces, N. M.
Fulghum, Mildred	State College, N. M.
Hadley, Mrs. Hiram	Mesilla Park, N. M.
Hagerty, Mrs. C. T.	State College, N. M.
Hancock, Ethel	Las Cruces, N. M.
Hawley, Eudora	Las Cruces, N. M.
Heilman, Mrs. E. J.	State College, N. M.
Helserm, Mrs. Ella	Las Cruces, N. M.
Hill, Mrs. Ford E.	Mesilla Park, N. M.
Hines, Mrs. L.	Mesilla, N. M.
Hitchcock, Mrs. Frank	State College, N. M.
Hoblit, Mrs. M. L.	State College, N. M.
Hollinger, Martha E.	State College, N. M.
Hookland, Mrs. S. S.	Mesilla Park, N. M.
Howarth, Anna	State College, N. M.
Islas, Christine	Las Cruces, N. M.
Jones, Mrs. Nellie Kedzie	Auburndale, Wis.
Kell, Mrs. John	Las Cruces, N. M.
Ladd, Mrs. Geo. E.	Mesilla Park, N. M.
Lallance, Agnes	Las Cruces, N. M.
Ledford, Jessie	St. Louis, Mo.
Lewis, Mrs. Hunter	Mesilla Park, N. M.
Lewis, Rena B.	La Mesa, N. M.
Locke, Mrs. C. E.	Mesilla, N. M.
Longbottom, Mrs. M.	Mesilla Park, N. M.
Matheson, Tessie F.	Mesilla Park, N. M.
May, Mrs. Vincent B.	Las Cruces, N. M.
McLendon, Ada	State College, N. M.
Meeks, Mrs. J. R.	State College, N. M.
Miller, Mrs. C. D.	Las Cruces, N. M.
Morrow, Mrs. W. B.	Las Cruces, N. M.
Phelps, Mrs. C. P.	State College, N. M.
Phelps, Ruth	Las Cruces, N. M.
Poe, Mrs. James	Mesilla Park, N. M.
Powell, Blanche S.	Mesilla Park, N. M.
Powell, Annie	State College, N. M.
Preston, Edith	Mesilla Park, N. M.
Ricketson, Mrs. Allen	State College, N. M.
Rigney, Mrs. J. W.	La Mesa, N. M.
Robbins, Mrs. J. C.	Mesilla Park, N. M.
Russell, Mrs. C. W.	State College, N. M.

Ryan, Mrs. Helen	Mesilla Park, N. M.
Seward, Mrs. A. L.	Long Beach, Cal.
Shaw, Wealthy	Las Cruces, N. M.
Shelton, Emma	Las Cruces, N. M.
Smith, Nellie C.	State College, N. M.
Smith, Mrs. M. M.	State College, N. M.
Smith, Mrs. N. M.	Las Cruces, N. M.
Stevenson, Mrs. John	Mesilla Park, N. M.
Stith, Lilly	Las Cruces, N. M.
Stith, Mrs. W. M.	Mesilla Park, N. M.
Strickland, Mrs.	State College, N. M.
Summerford, Ethel	Las Cruces, N. M.
Sutherland, Mrs. W. A.	Las Cruces, N. M.
Swain, Mrs. H. E.	Las Cruces, N. M.
Talbot, Ruth	Las Cruces, N. M.
Taylor, Mrs. Lytton R.	Las Cruces, N. M.
Thomas, Ruth	Las Cruces, N. M.
Tilton, Mrs. I. R.	State College, N. M.
Tubbs, Mary	Las Cruces, N. M.
Tubbs, Margaret	Las Cruces, N. M.
Turney, Mrs. C. T.	Mesilla Park, N. M.
Twining, Mrs. R. W.	Las Cruces, N. M.
Vaughan, Mrs. J. H.	State College, N. M.
White, Mrs. F. H.	La Mesa, N. M.
Williams, Mrs. Dan	Las Cruces, N. M.
Williams, Mrs. J. E.	Dona Ana, N. M.
Williamson, Mrs. G. D.	La Mesa, N. M.
Winningham, Mrs. M. F.	State College, N. M.
Yeo, Mrs. Herbert	Las Cruces, N. M.
Yoast, Eva	State College, N. M.

Total Enrollment Farmers' Week -----184

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Mechanic Arts



1918 - 1919

COLLEGE RECORD

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CALENDAR

1918

JULY							AUGUST							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
	1	2	3	4	5	6					1	2	3	1	2	3	4	5	6	
7	8	9	10	11	12	13	4	5	6	7	8	9	10	8	9	10	11	12	13	14
14	15	16	17	18	19	20	11	12	13	14	15	16	17	15	16	17	18	19	20	21
21	22	23	24	25	26	27	18	19	20	21	22	23	24	22	23	24	25	26	27	28
28	29	30	31				25	26	27	28	29	30	31	29	30					

OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5						1	2	1	2	3	4	5	6	
6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28
27	28	29	30	31			24	25	26	27	28	29	30	29	30	31				

1919

JANUARY							FEBRUARY							MARCH						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
			1	2	3	4							1							
5	6	7	8	9	10	11	2	3	4	5	6	7	8	2	3	4	5	6	7	8
12	13	14	15	16	17	18	9	10	11	12	13	14	15	9	10	11	12	13	14	15
19	20	21	22	23	24	25	16	17	18	19	20	21	22	16	17	18	19	20	21	22
26	27	28	29	30	31		23	24	25	26	27	28		23	24	25	26	27	28	29
														30	31					

APRIL							MAY							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5					1	2	3	1	2	3	4	5	6	
6	7	8	9	10	11	12	4	5	6	7	8	9	10	8	9	10	11	12	13	14
13	14	15	16	17	18	19	11	12	13	14	15	16	17	15	16	17	18	19	20	21
20	21	22	23	24	25	26	18	19	20	21	22	23	24	22	23	24	25	26	27	28
27	28	29	30				25	26	27	28	29	30	31	29	30					

COLLEGE CALENDAR

1918-1919

September 30, Monday, First term begins.

Faculty Meeting, 10:00 a. m.

Registration begins, 1 p. m.

October 1, Tuesday, Registration, from 9 a. m. to 4 p. m.

Special and Entrance Examinations.

October 2, Wednesday, Regular class work begins.

November 7, 8, Thursday and Friday, Mid-term Examinations
in all pre-college courses.

November 28, Thursday, Thanksgiving.

December 18-20, Wednesday, Thursday and Friday, Term Ex-
aminations.

December 21-January 1, Christmas Holidays.

January 2, Thursday, Second Term begins.

Registration, from 9 a. m. to 4 p. m.

January 3, Friday, Regular class work begins.

January 6-11, Monday to Saturday, Annual Conference of Ex-
tension Workers.

January 13-18, Monday to Saturday, Farmers', Stockmen's and
Home-makers' Week.

February 11, 12, Tuesday and Wednesday, Mid-term Examin-
ations in all pre-college courses.

March 25-27, Tuesday, Wednesday and Thursday, Term Ex-
aminations.

March 28, Friday, Third Term begins.

Registration, from 9 a. m. to 4 p. m.

March 28-April 1, Friday to Tuesday, Military Encampment.

March 31, Monday, Regular class work begins.

May 6, 7, Tuesday and Wednesday, Mid-term Examinations in
all pre-college courses.

June 13-17, Friday, Monday and Tuesday, Term Examinations.

June 15, Sunday, Baccalaureate Sermon, 11 a. m.

June 17, Tuesday, Closing Exercises of Secondary Classes, 8.
p. m.

June 18, Wednesday, Senior Class Day Exercises, 10 a. m.

Alumni Banquet, 8 p. m.

June 19, Thursday, Commencement Exercises, 10 a. m.

Alumni Business Meeting, 2 p. m.

BOARD OF REGENTS

C. H. HILL, President, Hill.

R. E. PUTNEY, Secretary and Treasurer, Albuquerque.

J. S. QUESENBERRY, Las Cruces.

E. C. Crampton, Raton.

M. Y. Monical, Hagerman.

EX-OFFICIO MEMBERS.

HON. W. E. LINDSEY, Governor of New Mexico, Santa Fe.

HON. J. H. WAGNER, State Superintendent of Public Instruction, Santa Fe.

OFFICERS OF ADMINISTRATION

AUSTIN DANIEL CRILE, President of the College and Acting Dean of the School of Agriculture.

JOHN HENRY VAUGHAN, Dean of the School of General Science and Registrar of the College.

ARTHUR FRANKLIN BARNES, Dean of the School of Engineering.

FABIAN GARCIA, Director of the Agricultural Experiment Station.

ABRAHAM C. COOLEY, Director of the Extension Service.

OTHER OFFICERS

MARY FRANCIS WINNINGHAM, A. B., Adviser of Women.

R. V. WARE, Accountant and Purchasing Agent.

FACULTY

AUSTIN DANIEL CRILE, President and Acting Dean of the School of Agriculture.

President and Acting Dean of the School of Agriculture, New Mexico College of A. and M. A., 1917—

✓ CLARENCE TURPIE HAGERTY, M. S., Professor of Mathematics and Astronomy.

B. S., Notre Dame University, 1890; M. S., *ibid*, 1895; Graduate student, Harvard University, summer, 1891; Professor of Mathematics and Astronomy, New Mexico College of A. and M. A., 1891—

✓ LUTHER FOSTER, M. S. A., Professor of Animal Husbandry.

B. S., Iowa State College, 1872; M. S. A., *ibid*, 1886; Superintendent of Schools, Monticello, Ia., 1873-1883; Superintendent of Schools, Jones County, Ia., 1883-1885; Professor of Agriculture, South Dakota Agricultural College, 1885-1893; Director of South Dakota Experiment Station, 1890-1893; Professor of Agriculture and Botany, Montana State College, 1893-1896; Director of Experiment Station and Professor of Agriculture, Utah Agricultural College, 1896-1900; Professor of Agriculture and Horticulture, Wyoming State University, 1900-1901; President New Mexico College of A. and M. A. and Director of Experiment Station, 1901-1908; Director of Experiment Station and Dean of Agriculture, 1908-1913; Professor of Agriculture, 1913-1914; Professor of Animal Husbandry, 1914—

✓ FABIAN GARCIA, M. S., Director of the Experiment Station and Professor of Horticulture.

B. S., New Mexico College of A. and M. A., 1894; M. S., *ibid*, 1905; Graduate student, Cornell University, 1899-1900; Assistant and Assistant Professor of Agriculture and Horticulture, New Mexico College of A. and M. A., 1894-1904; Professor of Horticulture, 1904; Director of Experiment Station, 1913—

✓ MERRITT LORRAINE HOBLIT, A. B., Professor of Modern Languages.

A. B., Kalamazoo College, and University of Chicago, 1901; Instructor in French and Spanish, Drake University, 1899-1900; Instructor in French and Spanish, Kalamazoo College, 1900-1901; Instructor in Romance Languages, Drake University, (on leave from N. M. A. C.), 1906-1907; Professor of Latin and Modern Languages, New Mexico College of A. and M. A., 1902-1917; Professor of Modern Languages, 1917—

✓ JOHN HENRY VAUGHAN, A. M., Dean of the School of General Science and Professor of History and Economics.

A. B., University of North Carolina, 1904; A. M., *ibid*, 1905; Hill Fellow in History, *ibid*, 1904-1906; Principal Roswell High School, 1906-1907; Graduate student, Summer School of the South, 1907; Professor of History and English, New Mexico Normal University, 1907-1909; Graduate student, University of Chicago, Extension Division, 1908-1909 and 1911-1913; President, New Mexico Educational Association, 1915; Professor of History, New Mexico College of A. and M. A., 1909-1913; Professor of History and Economics, 1913-1917; Dean of the School of General Science and Professor of History and Economics, 1917—

✓ PEARL CHERRY MILLER, B. S., Professor of Home Economics.

B. S., New Mexico College of A. and M. A., 1904; Diploma, Drexel Institute, 1906; Instructor in Domestic Science, Sherman Institute, Riverside, Cal., 1907-1910; Professor of Home Economics, New Mexico College of A. and M. A., 1910—

✓ ARTHUR FRANKLIN BARNES, B. S., Dean of the School of Engineering and Professor of Mechanical Engineering.

B. S. in M. E., Worcester Polytechnic Institute, 1908; Instructor in Mechanical Engineering, University of Pennsylvania, 1908-1913; Efficiency Engineer, Reed & Prince Mfg. Co., 1908 and 1910; Three summers with City of Worcester; Professor of Engineering, Middlebury College, 1913-1914; Dean of Engineering and Professor of Mechanical Engineering, New Mexico College of A. and M. A., 1914—

✓ SHERMAN BROWN NEFF, Ph. D., Professor of English.

A. B., Yale University, 1908; A. M., *ibid.*, 1909; A. M., Harvard University, 1910; Ph. D., *ibid.*, 1915; Instructor in English, Colby College, Waterville, Maine, 1911-1912; Head of English Department, Salem Classical and High School, Salem, Mass., 1912-1913; Professor of English, New Mexico College of A. and M. A., 1914—

✓ RALPH WILLIS GODDARD, B. S., Professor of Electrical Engineering.

Electrical Contractor, Worcester, Mass., 1905-1911; B. S. in E. E., Worcester Polytechnic Institute, 1911; Estimator on Building Construction, Gascoigne & Shattuck, Boston, Mass., 1911-1913; Instructor in Electrical Engineering, University of Nebraska, 1913-1914; Professor of Electrical Engineering, New Mexico College of A. and M. A., 1914—

✓ MARION SHIRLEY BOWEN, Professor of Practical Mechanics.

Graduate Miller School, Virginia, 1901; Machinist, Providence Engineering Company, Providence, R. I., 1901-1902; Machinist Brown & Sharp Mfg. Company, 1902-1904; Instructor in Shop Work, University of Missouri, 1904-1909; Professor of Practical Mechanics, Oklahoma School of Mines and Metallurgy, Wilburton, Okla., 1912-1914; Professor of Practical Mechanics, New Mexico College of A. and M. A., 1914—

✓ RUPERT LYONEL STEWART, M. S., Professor of Agronomy

B. S., New Mexico College of A. and M. A., 1911; M. S., Cornell University, 1914; Instructor in Agronomy, New Mexico College of A. and M. A., 1911-1913; Assistant Professor of Agronomy, 1914-1915; Professor of Agronomy, 1915-1916; Acting Dean of Agriculture and Professor of Agronomy, 1916-1917; Professor of Agronomy, 1917—

✓ DAYTON EUGENE MERRILL, M. S. Professor of Biology.

B. S., State University of Iowa, 1907; M. S., *ibid.*, 1910; Instructor in Biology, Boone, Iowa, High School, 1907-1908; Fellow in Zoology, State University of Iowa, 1909-1911; Assistant in Zoology, summer sessions, *ibid.*, 1910 and 1911; Assistant Professor of Biology, New Mexico College of A. and M. A., 1911-1915; Professor of Biology, 1915—

✓ LOUIS ALLEN HIGLEY, Ph. D., Professor of Chemistry.

A. B., Ohio Northern University, 1896; A. M., *ibid.*, 1899; Ph. D., University of Chicago, 1907; Public Schools, Ohio, 1889-1894; Private Academy and College, Illinois, nine years; Chief Chemist, the Kennicott Company, Chicago, 1908-1909; Chief Chemist, the Centralia Mining Company, Guadalajara, Mexico, 1909-1911; Professor of Chemistry, Westminster College, Missouri, 1911-1915; Professor of Chemistry, New Mexico College of A. and M. A., 1915—

✓ SEIBERT S. HOOKLAND, Professor of Commerce.

Graduate, State Normal School, Winona, Minn., 1887; Graduate student, University of Wisconsin, 1887-1889; Lutheran Theological Seminary, Chicago, 1897-1898; Principal, Commercial Department, Caton College, 1889-1894; Principal, Queen City Business College, Sioux Falls, S. D., 1894-1896; Principal, Commercial Department, Archibald Business College, Minneapolis, 1896-1897; Principal, Commercial Department, Banks Business College, Philadelphia, 1901-1905; Dean of Department of Commerce, Highland Park College, Des Moines, 1905-1907; Assistant Professor of Commerce New Mexico College of A. and M. A., 1910-1913; Professor of Commerce, 1913-1915, 1917—

JOHN GEORGE GRIFFITH, M. S., Professor of Physical Education.

B. S., University of Iowa, 1901; M. S., University of Idaho, 1913; in charge of Athletics and Instructor in Science, Simpson College, Iowa, 1901-1902; in Charge of Athletics and Instructor in Science, University of Idaho, 1902-1907; Graduate student and Assistant in Athletics, University of Iowa, 1907-1910; in Charge of Athletics and Assistant in Zoology, University of Idaho, 1910-1915; Coach in Athletics, Oklahoma A. and M. College, 1915-1916; Professor of Physical Education, New Mexico College of A. and M. A., 1917—

✓ GEORGE ROBINSON QUESENBERRY, B. S., Professor of Farm Management, in Charge of College Farm.

B. S. in Ag, New Mexico College of A. and M. A., 1911; Assistant in Animal Husbandry, 1911-1912; in Charge of Agricultural Department, Valley City, N. D., High School, 1912-1913; Farm Manager, 1913-1917; Professor of Farm Management, in Charge of College Farm, New Mexico College of A. and M. A., 1917—

✓ FRANK ARTEMAS HITCHCOCK, M. S., Professor of Civil Engineering.

B. S. in C. E., University of Wisconsin, 1910; Graduate Student, Cornell University, 1912-1914; M. S. in C. E., Christian Brothers' College, 1916; Assistant Engineer with P. H. Hintze, Drainage Engineer, summer 1910; Instructor, Putman Agricultural High School, 1910-1911; Assistant Engineer with Hall & Adams, Civil, Mining and Sanitary Engineers, summer 1911; Instructor in Civil Engineering, Cornell University, 1911-1914; Draftsman, Bridge and Building Department, Chicago, Milwaukee & St. Paul Railroad, summer 1912; Assistant City Engineer, City of Edgerton, Wis., summers 1913 and 1914; Instructor in Civil Engineering, Robert College, Turkey, 1914-1915; Draftsman and Computer, Chicago & Western Indiana Railroad, summer 1915; Professor of Engineering, Christian Brothers' College, 1915-1916; Professor of Civil Engineering, New Mexico College of A. and M. A., 1916—

✓ JAMES MARSHALL MCARTHUR, B. S., Acting Professor of Vocational Education.

B. S. in Ag., Kansas State Agricultural College, 1915; Graduate student, *ibid.*, summer, 1915; Teacher in Philippine Islands, 1908-1912; Instructor in Agriculture, State Normal School, Minot, N. D., 1915-1917; Extension Agronomist, New Mexico College of A. and M. A., 1917; Acting Professor of Vocational Education, 1917—

SEELEY ARTHUR WALLEN, First Lieutenant United States Army, Retired, Professor of Military Science and Tactics.

Graduate, Bordentown Military Institute, 1898; Student, Swarthmore College, 1898-1899; Professor of Military Science and Tactics, New Mexico College of A. and M. A., 1918—

✓ MARION LEONIDAS FOX, B. S., L. L. B., Professor of Economics.

B. S., Tusculum College, 1889; LL. B., University of Chattanooga, 1908; Staff of Washington (D. C.) Post, 1891-1905; Editor of Sioux Falls (S. D.) Daily Press, 1896-1904; Staff of New York Evening Journal, 1904-1906; Editor of Albuquerque Morning Journal, 1912-1918; Professor of Economics, New Mexico College of A. and M. A., 1918—

✓ DEAN WARD BLOODGOOD, B. S., Irrigation Engineer.

B. S. in M. E., New Mexico College of A. and M. A., 1908; Assistant in Irrigation, 1912-1915; Assistant Irrigation Engineer, 1915-1916; Irrigation Engineer, 1916—

✓ MARY FRANCIS WINNINGHAM, A. B., Adviser of Women and Assistant Professor of Mathematics.

A. B., Arcadia College; Student, Cape Girardeau, Mo., Normal School; Principal of High School, West Plains, Mo., 1900-1910; Superintendent of Schools, West Plains, 1910-1911; Dean of Women and Instructor in Mathematics and Latin, New Mexico College of A. and M. A., 1911-1915; Dean of Women and Instructor in Mathematics and History, 1915-1917; Adviser of Women and Assistant Professor of Mathematics, 1917—

✓ JOSEPH WHEELER RIGNEY, B. S., Assistant Professor of Horticulture.

B. S. in Ag., New Mexico College of A. and M. A., 1911; Chaves County Agricultural Agent, 1915-1916; Instructor in Horticulture, 1916-1917; Assistant Professor of Horticulture, 1917—

✓ JOSE QUINTERO, B. S., Assistant Professor of Chemistry.

B. S. in M. E., New Mexico College of A. and M. A., 1907; Assistant in Chemistry, 1911-1917; Assistant Professor of Chemistry, 1917—

✓ JAMES RILEY MEEKS, B. S., Assistant Professor in charge of Dairying.

B. S., Purdue University, 1914; Instructor in Animal Husbandry, New Mexico College of A. and M. A., 1914-1917; Assistant Professor in Charge of Dairying, 1917—

✓ FREDERICK CONRAD WERKENTHIN, A. M., Assistant Professor of Biology.

A. B., University of Texas, 1915; A. M., *ibid.*, 1915; Assistant in Botany, University of Texas, 1912-1913; Assistant in Agriculture, summer session, *ibid.*, 1913; Assistant in Bacteriology, *ibid.*, 1913-1915; Instructor in Botany, New Mexico College of A. and M. A., 1915-1917; Assistant Professor of Biology, 1917—

✓ ARRA BURTON FITE, B. S., Assistant Professor of Horticulture.

B. S. in Ag., New Mexico College of A. and M. A., 1915; Instructor in Horticulture, 1915-1917; Assistant Professor of Horticulture, 1917—

✓ ROYAL BURLEIGH THOMPSON, B. S., Assistant Professor in Charge of Poultry Husbandry.

B. S., Oregon Agricultural College, 1913; Foreman, Oregon Agricultural College Poultry Yards, 1913-1916; Instructor in Poultry Husbandry, New Mexico College of A. and M. A., 1916-1917; Assistant Professor in Charge of Poultry Husbandry, 1917—

✓ JOHN DEALY HUNGERFORD, B. S., Nutrition Chemist and Assistant Professor of Chemistry.

B. S., Kansas State Agricultural College, 1915; Graduate Student, *ibid.*, 1915-1916; Fellow in Chemistry, *ibid.*, 1916; Nutrition Chemist, New Mexico College of A. and M. A., 1916-1918; Nutrition Chemist and Assistant professor of Chemistry, 1918—

✓ JOHN WILLIAM JOURDAN, B. S., Assistant Professor of Irrigation Engineering.

B. S. in C. E., Purdue University, 1913; Engineering Department, United States Reclamation Service, Elephant Butte Dam, 1913; Engineering Draftsman, United States Reclamation Service, El Paso Valley, 1914; Office Topographer, United States Reclamation Service, Mesilla Valley, 1915-1916; in Charge of Operation and Maintenance, Leasburg Irrigation Canal, summer of 1917; Instructor in Irrigation Engineering, New Mexico College of A. and M. A., 1917; Assistant Professor of Irrigation Engineering, 1917—

✓ ARTHUR HENRY HOFFMAN, A. M., Assistant Professor in Charge of Agricultural Engineering.

A. B., Iowa Wesleyan College, 1897; A. M., *ibid.*, 1905; B. S. in E. E., Iowa State College, 1905; B. S. in Agr. Eng., *ibid.*, 1914; B. S. in E. E., *ibid.*, 1915; Instructor in Physics, *ibid.*, 1905-1907; Assistant Professor of Physics and Electrical Engineering, *ibid.*, 1907-1911; Associate Professor of Physics and Illuminating Engineering, *ibid.*, 1911-1913; Teacher in the Winter Short Course in Agricultural Engineering, New Jersey State College, 1914-1916; Assistant Professor in Charge of Agricultural Engineering, New Mexico College of A. and M. A., 1917—

✓ CHARLES AUGUSTUS THOMPSON, B. S., Assistant Professor of Agronomy.

B. S., Washington State College, 1914; Assistant in Soils, *ibid.*, 1917-1918; Assistant Professor of Agronomy, New Mexico College of A. and M. A., 1918—

✓ HELEN IDA THISSELL, Instructor in Home Economics.

Graduate, Miss Forehand's School of Domestic Science, Boston, 1904; Graduate, Boston Cooking School Course, Simmons College, 1906; Supervisor of Domestic Art, Clinton, Mass., 1908-1911; Instructor in Domestic Science and Art, Springfield, Mass., 1911-1913; Instructor in Domestic Art, Longfellow Evening School, Denver, Colo., 1914-1915; Instructor in Home Economics, New Mexico College of A. and M. A., 1915—

FLOY EDNA FRENCH, Librarian and Instructor in English.

Student New Mexico College of A. and M. A., 1893-1897; Graduate Commercial Department, 1897; Librarian Branch Delivery Station, Public Library, Chicago, 1901-1905; Librarian, New Mexico College of A. and M. A., 1914-1916; Librarian and Instructor in English, 1916—

GLADYS ELIZABETH CARROON, B. Pd., Instructor in Commerce.

B. Pd., New Mexico Normal University, 1914; Graduate Student, ibid., summer of 1914; Assistant Librarian, ibid., 1912-1914; Instructor in Commerce, Las Cruces High School, 1914-1916; Instructor in Commerce, New Mexico College of A. and M. A., 1916—

DONALD HUNTER COOK, B. S., Instructor in Chemistry.

B. S., Montana State College of A. and M. A., 1917; Assistant in Chemistry and Analyst for State Board of Health, Montana State College, 1916-1917; Instructor in Chemistry, New Mexico College of A. and M. A., 1917—

ELIZABETH CURTIS FOSTER, B. S., Instructor in English.

B. S., New Mexico College of A. and M. A., 1902; B. Pd., University of Wyoming, 1903; Student University of Chicago, summer terms, 1911, 1912, 1915; Teacher Las Cruces Public Schools, 1903-1904, 1905-1917; Instructor in English, New Mexico College of A. and M. A., 1917—

GENEVIEVE WOOD, Instructor and Head of Department of Music.

Student, Scio College; Graduate, Kent State Normal; Graduate, Department for Supervisors of Music, Cornell University, 1915; Instructor and Head of Department of Music, New Mexico College of A. and M. A., 1917—

JAMES MORTON FRANKLIN, B. S., Instructor in Horticulture.

B. S., Oregon Agricultural College, 1917; Instructor in Horticulture, New Mexico College of A. and M. A., 1917—

CLEVE WELIFORD HUMBLE, B. S., Instructor in Animal Husbandry.

B. S. in Ag., New Mexico College of A. and M. A., 1917; Instructor in Animal Husbandry, 1917—

GATES STIRLING VICKERS, B. S., Instructor in Poultry Husbandry.

B. S. in Ag., New Mexico College of A. and M. A., 1917; Instructor in Poultry Husbandry, 1917—

EXTENSION SERVICE STAFF**ABRAHAM C. COOLEY, B. S., Director of Extension Work.**

B. S., Utah Agricultural College, 1911; Head of Department of Agriculture, Jordan High School, Utah, 1911-1912; Head of Department of Agriculture, Ogden High School, Utah, 1912-1913; Agricultural County Agent, Colorado, 1913-1914; Director of Extension Work and State Leader of County Agents, New Mexico College of A. and M. A., 1914—

WILBUR LESTER ELSE, B. S., Farm Management Demonstrator and Assistant State County Agent Leader.

B. S. in Ag., Ohio State University, 1909; Assistant in Department of Cooperation, Ohio Experiment Station, 1909-1914; Assistant in Charge of Farm Management Extension, Purdue University, 1914-1916; Farm Management Demonstrator and Assistant State County Agent Leader, New Mexico College of A. and M. A., 1916—

EDWARD PATRICK JOHNSON, M. D. V., Extension Veterinarian.

M. D. V., McKillip Veterinary College, 1906; General veterinary practice, Kankakee, Ill., 1906-1907; Veterinarian Inspector, United States Bureau of Animal Industry, 1907-1917; in charge of tick eradication, north Arkansas, 1908-1912; in control of contagious diseases in New Mexico, including sheep and cattle scabies, testing cattle for tuberculosis, horses for glanders, and hogs for cholera, 1912-1917; Extension Veterinarian, New Mexico College of A. and M. A., 1917—

JOHN EARL WATT, M. S., State Dairy Extension Agent.

Student, Kansas State Agricultural College, 1908-1911; Student Assistant in Bacteriology, *ibid.*, 1910-1911; D. B. M., *ibid.*, 1911; Farming and Veterinary Practice, 1911-1914; Graduate Student, Oregon Agricultural College, 1914-1915; M. S. A., *ibid.*, 1915; Manager of Sun-Dial Dairy Ranch, Portland, Oregon, 1915; County Agricultural Agent, Lincoln County, Wyoming, 1916-1917; State Dairy Extension Agent, New Mexico College of A. and M. A., 1917—

JOHN WILLIAM KNORR, B. S., Assistant Emergency Demonstration Leader.

B. S. in Ag., New Mexico College of A. and M. A., 1913; Instructor in Agriculture, Logan County High School, Sterling, Colo., 1914; Scientific Assistant in Agronomy, United States Department of Agriculture, 1914-1915; Eddy County Agricultural Agent, New Mexico College of A. and M. A., 1915-1917; Assistant Emergency Demonstration Leader, 1917—

ROLAND HARWELL, Assistant Emergency Demonstration Leader.

Special Agent, Department of Commerce and Labor, 1910; Agriculturist, DuPont Powder Co., Wilmington, Del., 1911-1913; Farming in New Mexico, 1913-1914; Instructor in Agronomy, New Mexico College of A. and M. A., 1914-1915; Torrance County Agricultural Agent, 1915-1917; Assistant Emergency Demonstration Leader, 1917—

CHARLES ORCHARD SMITH, B. S., State Leader in Boys' and Girls' Club Work.

B. S., New York State College of Agriculture, Cornell University, 1916; Supervisor of Garden Clubs, Englewood Schools, New Jersey, 1916-1917; Emergency Assistant State Club Leader, New Jersey, 1917-1918; State Leader of Boys' and Girls' Club Work, New Mexico College of A. and M. A., 1918—

WILLIAM THOMAS CONWAY, B. S., Club Specialist in Canning and Drying.

A. B. Ouachita College, 1894; B. S., Oklahoma A. and M. College, 1910; Principal of Preparatory Department, Kendall College, 1898-1902; Vice President of Indianola College, 1902-1905; Principal of High School, Sulphur, Okla., 1906-1909; State Leader in Boys' and Girls' Club Work, New Mexico College of A. and M. A., 1911-1918; Club Specialist in Canning and Drying, 1918—

CHARLES ANDERSON McNABB, Field Agent in Marketing.

Secretary, Oklahoma Board of Agriculture, 1904-1907; County Agent, Grady County, Oklahoma, 1913-1914; District Agent, Extension Service, Oklahoma, 1914-1917; Field Agent in Marketing, *ibid.*, 1917; Field Agent in Marketing, New Mexico College of A. and M. A., 1918—

MANRIGUE RODRIQUEZ GONZALEZ, San Miguel County Agricultural Agent.

B. S. in Ag., Agricultural College of Utah, 1912; San Miguel County Agricultural Agent, New Mexico College of A. and M. A., 1914—

VERE LORRAINE MARTINEAU, Colfax County Agricultural Agent.

B. S. in Ag., Agricultural College of Utah, 1912; Colfax County Agricultural Agent, New Mexico College of A. and M. A., 1914—

JAMES GUY HAMILTON, B. S., Bernalillo County Agricultural Agent.

B. S. in Ag., New Mexico College of A. and M. A., 1915; Instructor in Agronomy, 1915-1917; Valencia County Agricultural Agent, 1917-1918; Bernalillo County Agricultural Agent, 1918—

RICHARD L. STRONG, B. S., Torrance County Agricultural Agent.

B. S. in Ag., Colorado Agricultural College, 1915; Farming in Colorado, 1915-1916; Torrance County Agricultural Agent, New Mexico College of A. and M. A., 1917—

DAVE F. LAUBMANN, B. S., Guadalupe County Agricultural Agent.

B. S. in Ag., Kansas State Agricultural College, 1914; Assistant Chief of Animal Husbandry, Bureau of Agriculture, Philippine Islands, 1915-1916; Guadalupe County Agricultural Agent, New Mexico College of A. and M. A., 1917—

HUNTER STEPHEN MOLES, B. S., San Juan County Agricultural Agent.

B. S. in Ag., Colorado Agricultural College, 1913; Manager of State Reformatory Farms and Teacher of Agriculture, Buena Vista, Colo., 1913-1914; Teacher of Agriculture in the Greeley, Colo., High School, 1914-1915; Manager E. N. Clark Ranch, Model, Colo., 1915-1917; San Juan County Agricultural Agent, New Mexico College of A. and M. A., 1917—

ORREN BEATY, B. S., Union County Agricultural Agent.

B. S. in Ag., Utah Agricultural College, 1909; Assistant Superintendent, Eastern Oregon, Dry Farming, Sub-station Moro, Oregon, 1909-1912; District Agricultural Agent, Oregon, 1912; Farming in Oregon, Coventry Agricultural Agent, Wheeler County, Oregon, 1913-1916; Union County Agricultural Agent, New Mexico College of A. and M. A., 1917—

FERNANDO ENRIQUEZ QUINTERO, M. S., Taos County Agricultural Agent.

B. S. in Ag., New Mexico College of A. and M. A., 1908; Farming in Mexico, 1908-1914; M. S. A., New Mexico College of A. and M. A., 1914; Farming in New Mexico, 1914-1917; Taos County Agricultural Agent, New Mexico College of A. and M. A., 1917—

ARNOLD ZANE SMITH, B. S., Eddy County Agricultural Agent.

B. S., Washington Agricultural College, 1914; Instructor in Agronomy, New Mexico College of A. and M. A., 1916; Eddy County Agricultural Agent, 1917—

HAROLD HEMINGWAY BROOK, Dona Ana County Agricultural Agent.

Student, Illinois College, 1903-1905; Newspaper Editor and Reporter, 1905-1908; Farming in New Mexico, 1908-1917; Dona Ana County Agricultural Agent, New Mexico College of A. and M. A., 1917—

JUAN MANUEL RAMIREZ, Santa Fe County Agricultural Agent.

Government Soil Survey of Dona Ana County, 1911-1912; Superintendent of Farms and Gardens, United States Army, General Hospital, Fort Bayard, N. M., 1912-1915; Foreman "Thousand Acre" Ranch, Dona Ana County, 1915-1917; Santa Fe County Agricultural Agent, New Mexico College of A. and M. A., 1917—

RICHARD FULLER, B. S., Chaves County Agricultural Agent.

B. S. in Ag., Massachusetts Agricultural College, 1915; Farm Manager, Wilton, New Hampshire, 1915-1916; Manager 1500 acre sugar plantation, Central Trinidad, Trinidad, Cuba, 1916-1917; Chaves County Agricultural Agent, New Mexico College of A. and M. A., 1917—

EMMETT M. YATES, B. S., Quay County Agricultural Agent.

B. S. in Ag., University of Missouri, 1916; Principal Tucumcari Junior High School, 1916-1917; Quay County Agricultural Agent, New Mexico College of A. and M. A., 1917—

ERASTUS PETERSON, B. S., Curry County Agricultural Agent.

B. S. in Ag., Utah Agricultural College, 1910; Assistant Agronomist and Foreman, College Farm, *ibid.*, 1910; Manager of Demonstration Farm, Metropolis, Nevada, 1911-1912; Farming in Nevada, 1912-1917; Curry County Agricultural Agent, New Mexico College of A. and M. A., 1917—

*RALPH R. ROBINSON, B. S., Chaves County Agricultural Agent.

B. S. in Ag., Colorado Agricultural College, 1917; Chaves County Agricultural Agent, New Mexico College of A. and M. A., 1917—

EARL JULIUS WILSON, B. S., Sierra County Agricultural Agent.

B. S. in Ag., New Mexico College of A. and M. A., 1913; I. A. Hospital Farm, Steward, N. M., 1913-1917; Sierra County Agricultural Agent, New Mexico College of A. and M. A., 1917—

HOMER PATRICK POWERS, B. S., Socorro County Agricultural Agent.

B. S. in Ag., New Mexico College of A. and M. A., 1916; Farming in New Mexico, 1916-1917; Socorro County Agricultural Agent, New Mexico College of A. and M. A., 1917—

WALTER MONTGOMERY ELLISON, B. S., Grant County Agricultural Agent.

B. S. in Ag., New Mexico College of A. and M. A., 1915; Teacher of Agriculture, Deming, N. M., High School, 1916; Teacher of Agriculture, North English High School, North English, Iowa, 1917; Grant County Agricultural Agent, New Mexico College of A. and M. A., 1917—

*Resigned

STUART STIRLING, B. S., Lincoln County Agricultural Agent.

B. S. in Ag., New Mexico College of A. and M. A., 1917; Emergency Demonstration Agent, Roosevelt County, 1917-1918; Lincoln County Agricultural Agent, 1918—

LESLIE PALMER BRIGGS, B. S., De Baca County Emergency Demonstration Agent.

B. S. in Ag., New Mexico College of A. and M. A., 1917; Assistant County Agricultural Agent, Curry County, 1917-1918; DeBaca County Emergency Demonstration Agent, 1918—

TURA ALICE HAWK, B. S., State Home Demonstration Leader.

B. Di., Iowa State Teachers' College, 1905; Assistant Principal, Iowa High School, 1905-1909; Instructor in English and Mathematics, South Dakota High School, 1910-1913; B. S. in H. E., Iowa State College, 1916; B. S. in Ag. Ed., Iowa State College, 1916; Instructor in Poultry Husbandry, Iowa State College, summer sessions, 1915 and 1916; Assistant State Home Economics Demonstrator, Iowa State College, 1915-1916; Home Demonstration Agent, Black Hawk Co., Iowa, 1916-1917, State Home Demonstration Leader, New Mexico College of A. and M. A., 1917—

CARRIE PADON PHELPS, B. S., Grant County Home Demonstration Agent.

B. S., McKendree College, Lebanon, Illinois, 1881; B. S. in H. E., New Mexico College of A. and M. A., 1913; Teacher of English and German in Public Schools of Illinois, 1881-1884; County Superintendent of Schools, Howell County, Missouri, 1900-1909. Postmaster, State College, N. M., 1913-1917; Grant County Home Demonstration Agent, New Mexico College of A. and M. A., 1917—

WILMA DETT EVANS, B. S., Colfax County Home Demonstration Agent.

B. S. in H. E., Kansas State Agricultural College, 1909; Dietician, Kansas City Hospital, summer, 1910; Instructor in Home Economics, Houston, Texas, 1910-1911; Extension Work, Kansas State Agricultural College, Sherman County, summer, 1911; Instructor in Home Economics and Agriculture, Goodland, Kansas, 1911-1912; Instructor in Home Economics, United States Indian Service, Oklahoma, 1912-1915; Instructor in Home Economics, High School, Raton, N. M., 1915-1917; Local Leader, Boys' and Girls' Clubs, ibid., 1916-1917; Colfax County Home Demonstration Agent, New Mexico College of A. and M. A., 1917—

LUCILLE WOODARD, B. S., Chaves County Home Demonstration Agent.

B. S. in H. E., Colorado State College, 1917; Boys' and Girls' Club Work, Colorado, 1914-1917; Chaves County Home Demonstration Agent, New Mexico College of A. and M. A., 1917—

MRS. JAMES TAUD STALKER, Roosevelt, Curry, and De Baca County Home Demonstration Agent.

Woman's Training School, St. Louis, Missouri, 1897; Graduate nurse and homemaker, 1897-1916; Roosevelt, Curry and DeBaca County Home Demonstration Agent, New Mexico College of A. and M. A., 1917—

**BERTHA BECKER, Bernalillo, Torrance, and Sandoval County
Home Demonstration Agent.**

Grade Teacher, Iowa Schools, 1897-98; Superintendent of Valmora Ranch Sanatorium, 1899; Private Hospital, Las Vegas, 1900-1904; Graduate Nurse, 1901; Y. W. C. A. Secretary, Albuquerque, New Mexico, 1916; Bernalillo, Torrance and Sandoval County Home Demonstration Agent, New Mexico College of A. and M. A., 1917—

**ELIZABETH COLEMAN KOGER, B. S., Assistant State Leader in
Boys' and Girls' Club Work.**

B. S. in Ag., New Mexico College of A. and M. A., 1902; Student, Columbia University, New York, 1910; Supervisor in Home Economics, El Paso Schools, El Paso, Texas, 1910-1911; Instructor in Home Economics, Monterey City Schools, Monterey, California, 1911-1917; Assistant State Demonstrator, New Mexico College of A. and M. A., 1917; Assistant State Leader in Boys' and Girls' Club Work, 1918—

**EDWIN CONDIT HOLLINGER, B. S., Assistant Union County Agri-
cultural Agent.**

B. S. in Ag., New Mexico College of A. and M. A., 1917; Assistant Union County Agricultural Agent, 1917—

GERTRUDE ESPINOSA, Assistant in Boys' and Girls' Club Work.

University of New Mexico, 1905-1910; Teacher in New Mexico Public Schools; California State Normal School, 1914; University of California, 1915; Valencia County High School, 1916-1917; Assistant in Boys' and Girls' Club Work, New Mexico College of A. and M. A., 1917—

**LURA EDNA DEWEY, B. S., Emergency Home Demonstration
Agent at Large.**

B. S., University of Idaho, 1909; Instructor in Home Economics, Lewiston High School, 1909-1914; Head of Department of Home Economics, Moscow High School, 1914-1917; Emergency Home Demonstration Agent at Large, New Mexico College of A. and M. A., 1918—

**LILIAN NANCY RANDALL, Emergency Home Demonstration Agent
at Large.**

Student, Oneonta Normal, 1897-1901; Student, Saint Lawrence University, 1909-1911; Emergency Home Demonstration Agent at Large, New Mexico College of A. and M. A., 1918—

OTHER OFFICERS AND ASSISTANTS

CLARENCE PENDLETON WILSON, M. S., Secretary to the President

B. S., New Mexico College of A. and M. A., 1908; M. S., *ibid.*, 1911; Extension Stenographer, 1911-1915; Extension Secretary and Editor of Agricultural Publications, 1915-1916; Experiment Secretary and Editor of Agricultural Publications, 1916-1917; Secretary to the President, 1917—

R. V. WARE, Accountant and Purchasing Agent.

Assistant Registrar, New Mexico College of A. and M. A., 1914-1915; Registrar, 1915-1917; Accountant and Purchasing Agent, 1917—

EDGAR LLEWELLYN BARROWS, Assistant in Irrigation.

Student, University of Michigan, 1905-1908; Assistant in Irrigation, New Mexico College of A. and M. A., 1917—

FRED JOHN FROST, Assistant in Radio and Buzzer Operating.

CHARLES EDWARD STRICKLAND, College Mechanic.

ARCH JAMES STRICKLAND, Assistant in Irrigation.

NINA BOLLINGER, Matron Girls' Dormitory.

MAE McDONALD HAWLEY, Executive Secretary Extension Service.

IDA BELLE GRUMBLES, Extension Stenographer.

JESSIE EDNA HORNIDY, Extension Stenographer.

EARL JAMES STEEN, Bookkeeper Accountant's Office.

NOVELLA FORD, Stenographer Accountant's Office.

MAUDE ELIZABETH WILSON, Stenographer Accountant's Office.

RUTH BRONSON, Extension Stenographer.

AGNES LALLANCE, Extension Stenographer.

NELLIE MEADE, Secretary to Dean of Engineering.

PEDRO OSUNA, Student Assistant in Chemistry.

MARTHA HOLLINGER, Student Assistant in Chemistry.

MARGARET SMART BUVENS, Student Assistant in Library.

COMMITTEES OF THE FACULTY.

Admission and Standing. Deans Vaughan and Barnes and Professors Stewart and Miller.

Schedules and Examinations. Professor Merrill, Chairman; Professors Hoblit, Foster, and Hitchcock, Miss Thissell, Mrs. Winningham, and Dr. Higley.

Social Functions. Mrs. Winningham, Chairman; Professors Bowen and Hungerford, and Miss Wood.

Student Employment. Director Garcia, Chairman; Professors Foster, Barnes, and Bowen.

Lyceum Course. Dean Vaughan, Chairman; Professors Hagerty, Goddard, and Rigney.

Student Publications. Dr. Neff, Chairman; Professors Werkenthin, and R. B. Thompson.

Athletics. Coach Griffith, Chairman; Lieutenant Wallen, and Professor R. B. Thompson.

Alumni Relationship. Professor Stewart, Chairman; Messrs. Wilson and Bloodgood.

Executive Committee. The President, Directors Garcia and Cooley, and Deans Vaughan and Barnes.

General Information

HISTORICAL SKETCH

The New Mexico College of Agriculture and Mechanic Arts is one of about fifty "land grant colleges" established in the several states of the Union in accordance with the provisions of an act of Congress approved July 2, 1862, commonly known as the Morrill Act. This historic measure marked the beginning of a new era in education. The purpose and scope of the institutions which were to be established under this act are set forth in the words of the act, which provides for a grant of land to each state for the establishment and maintenance of "at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." These colleges then were to offer both "liberal and practical education," both cultural and professional training, for the benefit of the industrial classes, the people who work.

On February 28, 1889, the 28th Legislative Assembly of New Mexico passed an act establishing the College and accepting for it the appropriations which had been made by Congress. The act further defined the character and purposes of the institution. It "shall be non-sectarian in character, devoted to practical instruction in agriculture, mechanic arts and natural sciences connected therewith, as well as in all branches of learning bearing upon agricultural and industrial pursuits. The course of instruction of the college hereby created shall embrace the English language, literature, mathematics, philosophy, civil engineering, chemistry, animal and vegetable anatomy, and physiology, the veterinary art, entomology, geology, political, rural and household economy, horticulture, moral philosophy,

history, mechanics, and such other sciences and courses of instruction as shall be prescribed by the regents.”

By its further act of February 26, 1891, the legislature of New Mexico accepted the congressional appropriation of 1890 and accepted and consented to all the terms and conditions upon which it was made, including the principle that the Territory should make adequate provision for buildings, grounds, and general expenses of maintenance, while the funds received from the federal government were to be applied to the maintenance of the Experiment Station and to the cost of instruction and the facilities for instruction in certain specified branches.

LOCATION.

The New Mexico College of Agriculture and Mechanic Arts is located at Mesilla Park, New Mexico, in the Rio Grande Valley, in the central southern part of the state. The college buildings are about one mile east of the Mesilla Park railway station, and about two and one-half miles south of Las Cruces, county seat of Dona Ana county, and forty miles north of El Paso, Texas. The main line of the A. T. & S. F. Railway from Chicago to El Paso runs through the college property.

This region, known as the Mesilla Valley, is one of the richest agricultural districts in New Mexico. There are twenty-five thousand acres of land under irrigation within ten miles of the College. All of this land is under the great Elephant Butte Dam and Engle Reservoir, which, recently completed, at an estimated cost of \$8,000,000, is the greatest work yet undertaken by the United States Reclamation Service.

The College has its own post office, the name of which is State College, New Mexico. The railroad, express, and telegraph address is Mesilla Park, New Mexico.

ORGANIZATION.

The work and functions of the New Mexico College of Agriculture and Mechanic Arts fall into three grand divisions—instructional service, experiment station service, and extension service. The instructional service, involving the greater part of the

educational work carried on at the College, embraces the college and secondary courses. The College proper comprises the School of Agriculture, the School of Engineering, and the School of General Science. The department of home economics is listed in this catalog as a division of the School of General Science. The several schools are under the immediate management of their respective deans; the Experiment Station and the Extension Service are likewise each under the supervision of a director; but the educational policy of the institution, in matters of general concern, is directed by the President and the faculty as a whole.

EDUCATIONAL PURPOSE.

The purpose of this institution is expressed in the words "practical and liberal" education. The work is primarily utilitarian in nature. The immediate aim is to make the student a better farmer, a better mechanic, a better engineer—to enable him to earn a better living and to live a richer and more useful life. In the course of this practical training the student will have ample opportunity to acquire those larger principles which make for intelligent manhood and leadership in the world.

COLLEGE COURSES.

The College offers the following courses of study, extending through four years, and leading to the degree of Bachelor of Science:

- I. Agriculture.
- II. Home Economics.
- III. Civil Engineering.
- IV. Electrical Engineering.
- V. Irrigation Engineering.
- VI. Mechanical Engineering.
- VII. General Science.
- VIII. Vocational Teachers.

These courses presuppose a full high-school training for entrance. With the exception of the General Science, they are professional courses. Each of them includes a thorough grounding in the fundamental sciences, a certain amount of general cul-

tural work in English, history, economics and languages, and a large amount of both theoretical and practical work in the special subject of the course. We expect those who complete these courses to be men and women of broad general education, with full technical equipment for the work of their several professions.

PRE-COLLEGE COURSES.

In addition to the regular college courses, there are four pre-college courses given, looking to the fulfillment of entrance requirements to college courses in agriculture, home economics, engineering, and general science. While these courses comprehend the equivalent of the usual work done in the standard high school, they are intended in no way to compete with the excellent high schools that are rapidly being established over the state. They are designed rather to meet the needs of students desiring an industrial training that will be of more practical value than the ordinary high school affords. The boy, for instance, who finishes the pre-agricultural or pre-engineering course, even though he continue his training no farther, ought to be a practical and intelligent farmer or mechanic. He will not be a profound specialist in agriculture or engineering, but he ought to be able to manage a farm by modern methods and make money, and he ought furthermore to be an intelligent and useful citizen and a helpful member of society. The girl who finishes the pre-home economics course ought to know how to cook plain, wholesome meals, sew, care for the sick, furnish a house, maintain sanitary conditions, and manage in an artistic and economical way the affairs of a household.

Students who expect to graduate from any of these pre-college courses are required to complete at least fifteen units of work—a unit being the equivalent of a course extending through the school year in classes meeting four or five times a week. Admission to regular enrollment in these courses is granted only to those who have satisfactorily completed the work of the eighth grade of the public schools.

NON-COLLEGIATE COURSES.

The non-collegiate courses offered in this institution as the name implies, are courses below college grade. They differ from the pre-college courses in that they are not designed to satisfy college entrance requirements. They are highly specialized and independent courses, and are planned primarily for those students who do not contemplate a college education, but want to prepare themselves for some immediate and practical line of work.

Automobile and Trade Courses. The School of Engineering has been recently authorized by federal legislation to give a number of trades courses for the making of mechanics and such other tradesmen as are needed in the State of New Mexico. These courses are entirely distinct from the regular technical college courses and lead to a certificate as qualified journeyman rather than to a professional degree as an engineer. Instruction has been provided in the way of special type teachers, and a two years' course is now being given, fitting young men to become expert automobile mechanics. As soon as the exact needs of the state can be ascertained, courses in other trades will be added.

Commercial Courses. A department of commerce is maintained in the institution for the purpose of providing advantages in business training for young men and women who are taking other vocational courses in the college, and for those who may desire to make business a vocation and follow business careers. Farm accounting, cost accounting, bookkeeping, shorthand, and all other business subjects generally included in business school curricula are taught in this department. The following courses are maintained: (1) Bookkeeping, (2) Bookkeeping and Accounting, (3) Shorthand, (4) Secretarial, (5) Business Training, and (6) Business Training for High School Graduates. For description of these courses see the department of commerce.

REQUIREMENTS FOR ADMISSION.

COLLEGE COURSES. To meet the full entrance requirements in any of the college courses, a student must present credits

amounting to a four years' high school course of not less than fifteen units. (A unit is the equivalent of one hour of recitation or two hours of laboratory work daily for thirty-six weeks.) But students are permitted to enter the freshman class who are conditioned in not more than two of the fifteen units—these conditions to be removed before the end of the freshman year. Special cases of mature students who wish to pursue college courses, but cannot present formal credits covering the required amount of preparatory work, will be considered on their merits. A student, regardless of the number of units offered for entrance, will be conditioned in any preparatory subject which he has not had that must necessarily precede a required subject in his college course.

SECONDARY COURSES. To enter the first year of the pre-college, commercial or trade courses, the student must have completed the eighth grade in the common schools.

CREDENTIALS. The student who expects to matriculate in this institution and wishes to receive credit for work done in some other school is advised to send his credentials to the President during the summer vacation, together with a definite statement of what course he wishes to take. If for any reason such credentials cannot be sent in advance of the student's arrival, he must be sure to bring them; otherwise he may be required to take the entrance examinations.

TIME TO MATRICULATE. *Particular attention is called to the fact that it is very much to the advantage of the student to be on time for matriculation. By doing so he avoids all loss of recitations at the beginning of his course as well as the payment of a late registration fee.*

SPECIAL STUDENTS.

Students of mature age, or those who have clearly defined special needs which are not served to the best advantage by any of the regular courses, may be admitted as special students. A student cannot become a special by failing in any part of his college work, or merely for the purpose of avoiding some

college requirement. Before a student will be classified as a special student, he must:

(1) Present to the President a written statement of his reason for wishing to take a special course. Such statement must show a serious purpose and desire to accomplish a regular course. It should include a statement of the line of work desired, and, in the case of a new student, should be accompanied by a statement of the work already done in other institutions.

(2) If a minor, present the written consent of the parent or guardian.

(3) Obtain the approval of the President.

(4) Pay a fee of five dollars a year in addition to the fees paid by regular students.

A student who has been accepted as a special student may elect any of the college, the preparatory, or the secondary technical courses, subject to the approval of the head of the department, who shall be the judge of his preparation for the work desired.

The institution offers a large variety of courses, both secondary and collegiate, so that, in all but very exceptional cases, the student will find a regular course to meet his needs. It is particularly urged that, as far as possible, all students enroll in regular courses. At the same time, it should be understood that the entire resources of the institution are open to the serious student with a definite purpose which cannot be served properly by a regular course.

IRREGULAR STUDENTS.

Students who, at the time of their entrance, are deficient in certain subjects or have credits in excess of those required, and students who fail in one or more subjects, may be temporarily irregular. They will be enrolled with the class to which they most nearly belong and will be held to the requirements of the course and class in which they are enrolled. The fact

that a student is irregular will not be considered as a reason for enrolling him as a special and releasing him from the requirements of the regular courses.

FEES AND DEPOSITS.

All students are required to pay a registration fee of \$6.00 at the beginning of each term.

Those who enter at any other time than upon the days announced as regular registration days, pay a late registration fee of \$1.00.

Special students pay an extra fee of \$2.00 a term.

Students from states other than New Mexico pay a tuition fee of \$4.00 a term, and students from foreign countries one of \$17.00 a term, in addition to the entrance fee.

No portion of the fees will be refunded to students who leave school before the end of the term.

All male students taking military drill are required to deposit at the time of registration the price of the adopted uniform, but at least \$14.00 of this amount is subsequently refunded by the United States government. The military uniform, which is made to individual measure, is required to be worn on all school days, thus taking the place of a regular suit of clothes. For further information see the department of military science and tactics.

A library deposit of \$2.50 is made by all students at the beginning of the year. This deposit is refunded at the close of the year, or upon withdrawal from college, less charges for damage to or loss of college property.

The following deposits are required for courses in which breakable apparatus is used by students: Chemistry, \$2.00 a term. Biology courses 32, 51, and 53, \$2.50 each. These deposits are refunded, less charges for breakage and damage.

Students in furnace assaying pay a fee of \$2.50 a term in addition to the chemistry breakage deposit of \$2.00.

Any student who ceases to attend classes for one week without excuse, or who leaves college without having secured a

withdrawal card and an honorable dismissal, will be considered as dismissed without honor and will forfeit all deposits.

BOARD.

The college dining room in McFie Hall has accommodations for about one hundred persons, or about fifty more than the number who room in the building. A large number of the young men take their meals there. The price of board without room at McFie Hall is \$16.00 a month, payable in advance at the accountant's office. This is only an approximate estimate, and the college reserves the right to make such changes as the present fluctuations in food prices may demand. The aim is to furnish board to the student at absolute cost. Those who do not care to take their meals at McFie Hall, will find in the vicinity a number of boarding houses and several private families who accommodate students with board.

GIRLS' DORMITORY.

McFie Hall, the dormitory for young women, will accommodate about fifty students. Room rent in this building, including light and heat, is \$4.00 a month when two young women occupy the same room. This amount is payable in advance on the first of each month. Young women who desire to occupy a room alone will be charged \$8.00 a month. The rooms are comfortably furnished, but each student must provide comforts, blankets, sheets, pillow-slips, towels, napkins, napkin-ring and two laundry bags. The student's name must be plainly marked on all pieces. A spoon and glass should be brought for use in the room.

All young women students are under the supervision of the Adviser of Women, who is also head of McFie Hall. Rooms should be reserved in advance by addressing the Adviser of Women or the Registrar.

It is the policy of the College that young lady students shall be required to room and board at the Girls' Dormitory unless they stay with relatives or others in the vicinity who will be fully responsible for them as guardians or chaperones.

BOYS' DORMITORY.

On the college campus near the Administration Building is the Boys' Dormitory, which will accommodate about sixty students. Room rent in this building is \$4.00 a month for each boy, two in a room. The young men are also expected to furnish their bedding (except mattress and pillow). The price named covers the cost of light and heat. The dormitory is in charge of a member of the faculty and study hour periods are enforced. There is no dining hall in connection with the building, but boys who room in this dormitory can secure board at McFie Hall.

ESTIMATE OF NECESSARY EXPENSES.

Matriculation fee	\$ 18.00	\$ 18.00
Nine months' board and lodging at \$20.00		
to \$24.00	180.00	to 216.00
Laundry per month at \$1.00	9.00	9.00
Books and stationery	10.00	to 20.00
Incidentals	10.00	to 15.00
Total	227.00	to 278.00

The average actual expense is about \$275.00 for the college year, including uniform, but not including other clothing and traveling expenses. The matriculation fee named above carries with it the privilege of attending all athletic contests held under the direction of the department of physical education, admission to all numbers of the college lyceum course, one copy of the annual publication of the Junior class, "The Swastika," and subscription to the student weekly, "The Round-Up," without additional cost to the students.

Text-books and stationery are sold to the student at cost at the college book store and supply room.

When satisfactory advance arrangements are made with the accountant, charge accounts of students will be opened covering expenses for board and room, textbooks, and sundry school supplies such as are kept for sale at the College. Settlement may be made by parents for such accounts on itemized statement rendered monthly by the accountant.

Where advisable, student funds may be deposited with the accountant and paid out at the discretion of the students or their parents. This practice is encouraged, as it makes for economy and affords parents the opportunity of keeping expenses down to the minimum.

SELF SUPPORT.

There is considerable labor on the farm, in the shops, and in the laboratories, that can be performed by students, and the policy is to give it to students rather than to others. Some students have been able to earn enough money during the year to pay their expenses; but those doing so have had constant employment in some subordinate position. The College cannot guarantee to furnish work for all students who wish it, or need it, in sufficient amount to pay expenses, but the College stands ready to help every worthy and industrious student who wants to help himself. In assigning work, preference is given to those who are most worthy and meritorious, and who are regular and punctual in attendance, and correct in deportment. This labor is paid for at the rate of from fifteen to twenty cents per hour, but the College reserves the right to limit the amount of work any student may do. In general, an energetic young man who wishes to work can count on earning enough to meet about half of his expenses. Many do better than this.

COLLEGE ORGANIZATIONS.

The public exercises of all college organizations are subject in time, place, and character to the approval of the President or faculty. When possible, notice should be handed to the President two weeks before the date desired for the exercise.

The faculty reserves the right of passing upon the constitution and by-laws of all college organizations.

THE STUDENT BODY.

For several years there has been an organization of the students known as the Student Body, which has had for its object the promotion of college spirit and the welfare of the student organizations in general. This organization adopted a constitution embodying a commission form of government under

which each class or department elects two representatives, the resulting commission transacting all business of the student body. The acts of the commission are subject to initiative petition and vote of the student body as a whole. The constitution also establishes the honor system, by which the conduct of any student may be investigated and acted upon by the commission. The Student Body has control of the college weekly paper and elects its editor at the close of each school year.

THE ROUND-UP.

The "New Mexico Collegian," founded in 1893 by the Columbian Literary Society, and the "College Weekly," founded in 1906, by the Stenographers' Association, combined in 1907, forming "The Round-Up," a weekly under the control of the student body. The publication is in newspaper form. Its marked success has been due largely to the excellent work of the editorial staffs and the strictly business basis upon which it is conducted.

THE COLUMBIAN LITERARY SOCIETY.

The Columbian Literary Society has the distinction of being one of the oldest organizations of the College, and has held for many years a prominent place in the affairs of student life. The constitution admits only male students as members of the society. Meetings are held fortnightly and special prominence is given to oratory, debating and parliamentary practice. An annual debate is held between the members of the Columbian and Atadida Literary Societies. The work of these societies, stimulated by the state contests and prizes offered by the Alumni, is creating an ever-increasing interest in public speaking.

THE ATADIDA LITERARY SOCIETY.

This is a literary society formed by the young women of the College, and has virtually the same aim as the Columbian. Some excellent and earnest work has been done during the past years, and the members feel that they have derived great benefit from it. Members of the Atadida Society may take part in most of the contests open to the Columbians. Every young woman in College should join this society.

AGRICULTURAL CLUB.

In order to foster a spirit of co-operation among the students and between the students and faculty, and to increase the interest in the agricultural work generally, this club has been organized and officered by the students under the direction of the agricultural faculty. The work of the club consists of weekly meetings for the purpose of hearing papers read by students, by visitors, and by the faculty members, with an occasional social affair to which the general public is invited. Regular meetings are held each Wednesday night.

ENGINEERS' CLUB.

The Engineers' Club was formed in the earlier years of engineering at this institution and reorganized in 1914. It holds meetings regularly twice a month. Its purpose is the fostering of engineering and good fellowship by means of student papers and addresses by the faculty and outside engineers. Through this organization inspection trips are conducted to points of engineering interest around the College, such as Elephant Butte Dam and El Paso.

ATHLETIC ASSOCIATION.

In 1893, the students organized the first Athletic Association to encourage and promote physical education and hygienic training of its members and to foster all athletic sports suitable for college students. The association has been in continuous existence since that date and has expanded and developed until it is better organized and equipped, with athletic goods and grounds, and with funds to carry on the work, than any like organization in the State.

In 1912, it was voted by the students and approved by the board of regents that part of the matriculation fee should be used to support athletics, and that all students paying this fee should be members of the Athletic Association with the privilege of attending all athletic contests held under the direction of the department of physical education without additional charges.

Under the present organization the affairs of the Association are under the direct supervision of the head of the department of physical education. The athletic board, which consists of five members of the Athletic Association and the head of the department of physical education, acts in an advisory capacity.

The college athletic field is by far the best field for football, baseball and track work of any in the State. Besides this we have the large, well-lighted gymnasium floor, 40x90 feet, suitable for gymnasium classes, folk dancing and basketball; four tennis courts, two out-door basketball courts and a volley ball court; all of which are maintained by the Association for the use of the students.

THE YOUNG MEN'S CHRISTIAN ASSOCIATION.

No organization in the College occupies a more prominent or essential place than the Young Men's Christian Association; none offers larger opportunities for individual service; none exerts a more healthful influence on the student body as a whole. The Association owns a large two-story building, erected by liberal popular subscription, and handsomely equipped with dormitory, rest, and reading rooms. With this building as a center, various lines of religious and social activity are carried on. Sunday and mid-week meetings are held, bible classes are conducted, and extension work of various kinds is done. The membership of the Association comprises a large portion of the students and faculty of the College.

THE YOUNG WOMEN'S CHRISTIAN ASSOCIATION.

Over seventy-five per cent of the young women in the College are members of the Young Women's Christian Association. The regular devotional meetings are held on Friday of each week, and are led by ministers from some of the nearby churches, members of the faculty, or other able speakers. The society is visited annually by the State Secretary, and frequently by the national secretary, and one or more girls are usually sent to the yearly conference in Cascade. The ideal of prepar-

ation for personal service is kept always uppermost, and the wholesome, helpful influence of the Association on the life of the College can hardly be estimated.

CHURCHES.

All students are trained in the principles of morality, but no sectarian teaching is tolerated in the College. The religious activities of the students, however, are not confined to the Young Men's and the Young Women's Christian Associations. The usual services are held every Sunday at the Presbyterian and Episcopal churches of Mesilla Park, also at the Catholic, Presbyterian, Methodist, Baptist, and Episcopal churches of Las Cruces. Entire freedom of choice is given the student in selecting the church he will attend.

DISCIPLINE AND GOVERNMENT.

By the creation of the College of Agriculture and Mechanic Arts there have been provided for the youth of New Mexico the fullest and best opportunities to secure a practical education. Students who enjoy the advantages here offered should realize that to forfeit these privileges on account of their misuse or abuse is a matter of the most serious concern. This institution has no written rules relating to the conduct of students, but any violation of the accepted code is dealt with by the President or faculty council as the particular case may demand. As regards behavior, students are expected to conduct themselves as ladies and gentlemen. If, after a fair trial, the influence of any student is found to be detrimental to scholarship, morals, or good order, dismissal will follow. This is pre-eminently a place for serious and earnest students.

ABSENCE AND TARDINESS.

Any student who has been absent from class and has failed to render an excuse within two days after returning may be excluded from all classes until a satisfactory explanation has been made, and will be given a daily grade of zero in all classes until reinstated. Women students must render excuses for absence from classes to the Adviser of Women; male students to the

President or such instructor as he may designate. A student will be given a daily zero for each absence unexcused, unless the work is made up to the satisfaction of the instructor.

Any student who is more than ten minutes late at class must render an excuse the same as for absence. A student who is not more than ten minutes late may be excused at the discretion of the instructor.

MISCELLANEOUS.

It is the duty of any instructor or other college officer to note and rebuke violations of good order.

No student whose work is unsatisfactory shall be permitted to take part in any public exercise connected with the College.

A student excused from military drill for physical disability or other reason, shall be required to take either corrective physical exercise or additional class-work to the amount of three practice hours each term.

All students are required to attend a general assembly once a week.

EXAMINATIONS.

Examinations for college students are held at the end of each term; for pre-college, commercial and trades students at the middle and end of each term. Entrance examinations are held at the beginning of the first term. Students whose class work is given grades A or B may, at the option of the instructor, be excused from examination. Reports are sent to parents or guardians of all students after each examination.

SYSTEM OF GRADING AND CREDITS.

In accordance with the system of grading adopted in this institution, the letters A, B, C, D, and E are used,—these letters having the following significance: A, 90-100 per cent., indicating excellent work on the part of the student; B, 80-89 per cent., indicating good work; C, 70-79 per cent., indicating fair work; D, 55-69 per cent., indicating condition; E, below 55 per cent., indicating failure. Plus and minus signs after the letters may be employed or not as the instructor chooses. A student's

work is recorded as incomplete only when not fully performed for good and sufficient reason,—such as late entrance, sickness, etc.,—the time limit for the removal of such incompleteness to be determined by the instructor in charge. Work otherwise unsatisfactory is recorded as condition or failure as the case may be. Students who are conditioned may remove the condition by a special examination or by study outside of class that meets with the approval of the instructor. All conditions must be removed by the end of the term following their incurrence. Students who fail must take the work again in class.

College credit is reckoned in terms of units. A unit of college work is the equivalent of one hour of recitation or two hours of practice per week for twelve weeks or one term. A minimum of two hundred and twenty-five units is required for the completion of any of the regular college courses. This number includes nine units of credit allowed for military drill and physical culture. In other words, in order to graduate from this institution, the student must do satisfactory work to the extent of eighteen credit hours per week throughout the four years, and, in addition, three practice hours per week in military drill or physical culture through the freshman and sophomore years. Neither military drill nor physical culture will be required of students entering with junior or senior standing; nor will the requirements in these subjects be retroactive on students entering with advanced standing below the junior year.

No credit in any course is given for less than a full term's work.

CLASSIFICATION.

Students are classified according to the number of units they have completed. Fifty-four units of college work are required in each year of the college course, in addition to the military drill or physical culture, required of all able bodied students not classified as juniors, seniors or graduates.

No student taking a regular course is allowed to take any subject in that course until he has passed in all preceding work necessary to fit him for that subject. Neither will such a stu-

dent be excused from any prescribed work in that course except by action of the President.

No special student is allowed to enter any class unless in the opinion of the instructor in charge he is prepared in all necessary preceding branches.

In case of any conflict in the program of studies the higher subject shall give way to the lower unless otherwise ordered by the President.

This College will accept credits from other institutions of equal rank.

To withdraw from any class, a student must present to the instructor the proper withdrawal card signed by the President.

To pursue special work in this institution a student must present reason in writing for the same to the President for his approval.

No student shall be allowed to register for less than eighteen credit hours, or more than twenty-one, except with the consent of the President and the dean of the school in which the student is registering.

GRADUATION.

In order to graduate in any of the regular college courses, the student must have taken work amounting to eighteen credit hours each term for four years, the last of which must have been spent in residence at this College. All male students except juniors, seniors, and graduate students are required to take, additionally, three hours per week in military science and tactics. Similarly, all young women, except juniors, seniors and graduate students are required to take three hours per week of physical education.

Seniors having conditions not removed at the middle of the third term of the senior year will not be considered candidates for a degree.

Each candidate for graduation is required to prepare a thesis, which shall be passed upon by a committee consisting of the head of the department in which the work is done, the pro-

fessor of English and the President.

Any candidate for graduation may be required by the faculty to give an exercise on commencement day, consisting of an oration or an abstract of his thesis.

Subjects of theses must be presented to the head of the department for approval not later than the middle of the second term of the senior year.

All theses must be handed in for final inspection at least one week before commencement day, and finished theses must be filed with the Registrar not later than Monday of commencement week.

A thesis in order to be finally accepted must be clearly typewritten on good paper, 8½x11 inches in size, and bound for preservation.

GRADUATE STUDENTS.

The work of graduate students is under the supervision of a committee of three, composed of the President, the dean of the school concerned, and the head of the department in which the major work is taken. The chairman of this committee is head of the department concerned.

Regarding graduate courses of study, the following rules must be observed:

(1) The course shall consist of work equivalent to eighteen lecture hours per week, and shall be distributed between one major and one minor.

(2) The major, covering twelve hours, shall be advanced work not offered to undergraduates, in line with the candidate's principal work leading to the B. S. degree, and at least half of it shall be devoted to research whose results shall be embodied in a thesis.

(3) The minor, covering six hours, may be chosen from a line distinct from that of the major, and may include work offered to the undergraduates of the junior and senior years.

(4) The candidate must pass a satisfactory examination upon his work and present his thesis for final approval in typewritten form ten days before commencement.

DEGREES.

The degree of *Bachelor of Science* (*B. S.*) is conferred upon students who satisfactorily complete the work prescribed in any of the collegiate courses of study; but in order to receive the *B. S.* degree students are required to spend at least one year immediately before graduation in this institution.

The degree of *Master of Science* (*M. S.*) is conferred upon students of this institution who, after taking the degree of *B. S.* pursue for at least one year as resident, or two years as non-resident students, a course of study approved by the committee in charge, pass an examination upon the same, and present a satisfactory thesis. Students of other institutions of similar character and equal rank, holding the bachelor's degree and desiring to take the *M. S.* degree from this institution, are subject to the same requirements as above, except that they must spend the year next preceding the granting of the degree in resident study.

BUILDING AND EQUIPMENT.

The property of the College includes an irrigated experimental farm of about 200 acres, and about an equal amount of unirrigated land. The campus upon which the principal buildings are located, consists of about twenty acres irrigated from a large pumping plant. The buildings include the following:

HADLEY HALL, Administration Building, containing offices of administration, the assembly hall, the department of home economics, the college book store, and the post office.

WILSON HALL, Agricultural Building, containing class rooms, laboratories, and offices for the departments of agronomy, animal husbandry, horticulture, irrigation engineering, and the Agricultural Experiment Station. The basement contains a well equipped dairy laboratory.

BOYS' DORMITORY, a two-story brick building containing rooms for about sixty boys. The building has modern conveniences, and is under the management of a member of the faculty who rooms in the building. The rooms are well furnished.

SCIENCE HALL, containing the class rooms and laboratories of the departments of chemistry, soil physics and biology.

ENGINEERING BUILDING, a three-story fireproof structure of reinforced concrete, erected in 1913. This building houses the departments of agricultural, civil, irrigation, mechanical and electrical engineering, and physics. The college library now occupies the main portion of the third floor.

MECHANICAL ENGINEERING LABORATORIES, two one-story buildings containing a large amount of floor space for the department of mechanical engineering, including the mechanical engineering laboratory, the forge and automobile shops.

Y. M. C. A. BUILDING, erected by private subscription at a cost of \$15,000, occupies a prominent position on the campus and is the center of the religious and much of the social life of the College. The upper floor contains living rooms for eighteen young men, and the rental received helps to defray the expenses of the Association.

McFIE HALL, the dormitory for young women, is located a little apart from the other college buildings, on the avenue which runs through the college farm from the main campus to Mesilla Park. It has all modern conveniences, including steam heat, electric light, and baths, and will accommodate about fifty people. The college dining hall is located here.

THE GYMNASIUM, erected in 1911, is the center of the athletic activities of the College. The first floor is used for the armory, recitation rooms, locker rooms, dressing rooms, bath rooms, and the office of the department of physical education. The second floor consists of one large room, fifty by eighty feet, with a gallery all around containing a running track.

THE OLD MAIN BUILDING, which was the first building erected on the college campus, was completely destroyed by fire in September, 1910, and this loss creates an urgent need for a new building to supply additional class rooms.

OTHER BUILDINGS. In addition to the principal buildings above mentioned, there are numerous farm buildings: the seed

house, green house, a large adobe corral with sheds for stock, feed and implements, a farm building on the horticultural farm, and two pump houses.

EQUIPMENT OF DEPARTMENTS. All the departments are well equipped with apparatus, material, books, and furniture for handling classes in their subjects. The institution pays fire insurance on a valuation of \$143,000 invested in equipment for the various college departments. This does not include the value of buildings and lands.

RECENT IMPROVEMENTS. During the past year four large stock barns have been built, and extensive improvements have been made on the college grounds. A new septic sewer system now effectually disposes of all waste from the main buildings. The campus has been cleared, leveled, and fenced, and is being supplied with a complete new pumping plant and water distributing system. With these ample irrigation facilities provided, more grass, trees, shrubs, and flowers will be planted to further beautify the grounds.

THE LIBRARY.

The college library has been moved from Hadley Hall to the third floor of the Engineering Building. This change provides both better and safer accommodations. The library consists of over 18,000 volumes, and 34,000 pamphlets. It is in addition a designated depository for all publications of the United States government.

The library is intended to supplement in every possible way the work of the class or lecture room. It is open for reference from eight to five every day except Saturday afternoons and Sunday. Its books circulate among students and faculty with only slight restrictions. Both department and general library books are indexed in the general catalogue, making them all accessible. The library contains a representative collection of general literature; an excellent collection on agriculture and allied subjects; all available matter from the United States Department of Agriculture and the State Experiment Stations, and

a large amount from the various State Departments of Agriculture. Much material from foreign countries is continually being catalogued, presenting a very complete view of the field of agricultural work at the present time. There are also excellent collections in the departments of botany, chemistry, and mechanical engineering, and the New Mexico material is being added to it as opportunity arises.

The reference room contains a large and up-to-date collection, and encyclopedias, dictionaries and yearbooks are added as published. Many complete sets of bound periodicals, both technical and general, are on file here and are easily accessible by the aid of several indexes. The library has been a government depository since 1908, thus receiving much material of timely interest.

In the reading room there are on file two hundred and seventeen magazines, journals and transactions of learned societies. Seven daily newspapers from various parts of the country are received and twenty-six weeklies from various counties of New Mexico are donated by their publishers.

The library is open from 8 a. m. to 12 m., and from 1 p. m. to 5 p. m., five days of the week, and from 8 a. m. to 12 m. on Saturdays. By making the necessary application to the librarian, books and periodicals may be withdrawn, subject to the following rules:

(1) Encyclopedias and similar works of reference do not circulate.

(2) Current numbers of periodicals may not be kept out of the library longer than over night except during the period from Friday evening to Monday morning. For each day over time a fine of five cents is imposed. The last seven issues of the dailies, the last two issues of the weeklies, and the last issue of the monthlies are considered current numbers.

(3) Current numbers of periodicals may not be withdrawn sooner than one hour before the library is closed, and must be returned by 9 a. m. of the following day on which the library is opened.

(4) Periodicals other than current numbers are governed by the same rules as library books.

(5) No books or periodicals assigned to any department may be withdrawn without the express consent of the head of that department. A record of loans is kept in each department.

The continued disregard of any of these rules will lead to the withdrawal of the privileges of the library from the offender.

Experiment Station

Experiment Station

EXPERIMENT STATION STAFF.

AUSTIN DANIEL CRILE, President of the College.

FABIAN GARCIA, M. S. A., Director and Horticulturist.

LUTHER FOSTER, M. S. A., Animal Husbandman.

DAYTON EUGENE MERRILL, M. S., Biologist.

LOUIS ALLEN HIGLEY, Ph. D., Chemist.

RUPERT LYONEL STEWART, M. S. A., Agronomist.

GEORGE ROBINSON QUESENBERRY, B. S. A., Farm Manager.

*DEAN WARD BLOODGOOD, B. S., Irrigation Engineer.

ROYAL BURLEIGH THOMPSON, B. S. A., Poultryman.

JOHN DEALY HUNGERFORD, B. S., Nutrition Chemist.

JOSE QUINTERO, B. S., Assistant Chemist.

JAMES RILEY MEEKS, B. S. A., Assistant Animal Husbandman.

JOSEPH WHEELER RIGNEY, B. S. A., Assistant Horticulturist.

ARRA BURTON FITE, B. S. A., Assistant Horticulturist.

FREDERICK CONRAD WERKENTHIN, M. A., Assistant Biologist.

CLEAVE WELIFORD HUMBLE, B. S. A., Assistant Animal Husbandman.

CHARLES AUGUSTUS THOMPSON, B. S., Assistant Agronomist.

DONALD HUNTER COOK, B. S., Assistant Chemist.

EDGAR LLEWELLYN BARROWS, Assistant in Irrigation.

†H. G. SMITH, B. S. A., Assistant in Dry-Land Agriculture.

JAMES MORTON FRANKLIN, B. S., Assistant in Horticulture.

FLOY EDNA FRENCH, Librarian.

CLARENCE PENDLETON WILSON, M. S., Secretary and Editor.

*In co-operation with the Office of Public Roads and Rural Engineering, United States Department of Agriculture.

†Superintendent of the Tucumcari, New Mexico, Field Station, operated by the United States Department of Agriculture, in co-operation with the New Mexico Agricultural Experiment Station.

Experiment Station

The Experiment Station is that part of the institution which devotes its energies primarily to the verification of experimental data elsewhere obtained, with reference to the applicability to New Mexico conditions; to the determination of agricultural facts and principles affecting the agricultural practice in the State; and to the publication and distribution among the people in the State of the experimental and research data obtained from its investigations. The acts creating the Experiment Stations very clearly indicate what their functions shall be. The Hatch Act, approved in March, 1887, states that the law was passed

"In order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigations and experiments respecting the principles and applications of agricultural science. * * * * * It shall be the duty and object of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subjected, with remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under the varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and waters; the chemical composition of manures, natural and artificial; with experiments designed to test the comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective states and territories."

The Adams Act, approved in 1906, reads as follows:

"For the more complete endowment and maintenance of agricultural experiment stations now established, or which may hereafter be established in accordance with the act of Congress approved March 2, 1887;" the amount appropriated "to be applied only to paying the necessary expenses of conducting original researches or experiments bearing directly on the agricultural industry of the United States."

The Station has issued 108 regular bulletins, giving the results of experiments conducted along various agricultural lines; 304 press bulletins, of a popular nature; and a large number of press articles. Copies of such of these as are at present available may be had on application to the Director of the Station.

The agricultural experts employed by the Station are now at work on fifty projects dealing with problems of a practical or scientific nature and pertaining especially to New Mexico conditions. For a detailed statement concerning these, write the Station for a copy of the last annual report of the Director.

While these experts devote a large part of their time to research work, they are also engaged largely in teaching and extension work. Because of their experience with southwestern conditions, their services are more valuable to the students and farmers. Several thousand inquiries concerning matters pertaining to agriculture are answered every year by members of the Experiment Station staff.

During the past year, in addition to the annual report, containing 92 pages, four regular bulletins, with a total of 269 pages; 22 press bulletins, containing 28 pages; and 23 press articles were issued by the Experiment Station. The editions of these various publications contained about 1,425,300 pages of printed matter.

Extension Service

Extension Service

EXTENSION SERVICE STAFF.

AUSTIN DANIEL CRILE, President of the College.

ABRAHAM C. COOLEY, B. S., Director of Extension.

County Agricultural Agent Work.

Supervision.

WILBUR LESTER ELSE, B. S., County Agent Leader.

ROLAND HARWELL, Assistant Emergency Demonstration Leader.

JOHN WILLIAM KNORR, B. S., Assistant Emergency Demonstration Leader.

County Agricultural Agents.

VERE LORRAINE MARTINEAU, B. S., Colfax County.

MANRIQUE RODRIGUEZ GONZALEZ, B. S., San Miguel County.

ORREN BEATY, B. S., Union County.

JAMES GUY HAMILTON, B. S., Bernalillo County.

ERASTUS PETERSON, B. S., Curry County.

HAROLD HEMINGWAY BROOK, Dona Ana County.

JUAN MANUEL RAMIREZ, Santa Fe County.

HOMER PATRICK POWERS, B. S., Socorro County.

WALTER MONTGOMERY ELLISON, B. S., Grant County.

EARL JULIUS WILSON, B. S., Sierra County.

RICHARD L. STRONG, B. S., Torrance County.

EMMETT M. YATES, B. S., Quay County.

DAVE F. LAUBMANN, B. S., Guadalupe County.

HUNTER STEPHEN MOLES, B. S., San Juan County.

FERNANDO ENRIQUEZ QUINTERO, M. S., Taos County.

RICHARD FULLER, B. S., Chaves County.

STUART STIRLING, B. S., Lincoln County.

ARNOLD ZANE SMITH, B. S., Eddy County.

.....Otero County.

.....Valencia County.

.....Rio Arriba County.

.....McKinley County.

.....Sandoval County.

EDWIN CONDIT HOLLINGER, B. S., Assistant County Agricultural Agent, Union County.

LESLIE PALMER BRIGGS, B. S., Emergency Demonstration Agent, De Baca County.

**County Home Demonstration Work.
Supervision.**

TURA ALICE HAWK, B. S., State Home Demonstration Leader.

LILIAN RANDALL, Emergency Home Demonstration Agent at Large.

EDNA LURA DEWEY, B. S., Emergency Home Demonstration Agent at Large.

District Agents.

BERTHA BECKER, District Home Demonstration Agent.

MRS. JAMES TAUD STALKER, District Home Demonstration Agent.

SARAH VAN VLECK, District Home Demonstration Agent.

County Home Demonstration Agents.

WILMA DETT EVANS, B. S., Colfax County.

CARRIE PADON PHELPS, B. S., Grant County.

LUCILE WOODARD, B. S., Chaves County.

Boys' and Girls' Club Work.

CHARLES ORCHARD SMITH, B. S., State Leader in Boys' and Girls' Club Work.

ELIZABETH COLEMAN KOGER, B. S., Assistant State Club Leader.

WILLIAM THOMAS CONWAY, B. S., Specialist in Canning and Drying.

GERTRUDE ESPINOSA, Assistant in Boys' and Girls' Club Work.

Specialists.

JOHN EARL WATT, M. S., State Dairy Extension Agent.

EDWARD PATRICK JOHNSON, M. D. V., Extension Veterinarian.

FABIAN GARCIA, M. S., Horticulturist.

DAYTON EUGENE MERRILL, M. S., Biologist.

ROYAL BURLEIGH THOMPSON, B. S., Poultryman.

CHARLES ANDERSON McNABB, Field Agent in Marketing.

Extension Service

The Extension Service, organized in keeping with the Federal Smith-Lever Act, provides for co-operative extension work in agriculture and home economics in the several states taking advantage of it. It was established in New Mexico for the purpose of disseminating scientific knowledge of agriculture and home economics among the people of the State. Its object is to improve and secure better home conditions, better farm practice, better organization, and better management, to the end of increasing the net farm income, and in general, to make a more profitable, pleasant and attractive country life. It represents the combined efforts of the New Mexico College of Agriculture and Mechanic Arts and the United States Department of Agriculture to carry throughout the state those kinds of information that will be of the most practical value to the farmers, stockmen, and homemakers of New Mexico. The actual work of the Service is carried on by county agricultural agents, county home demonstration agents, agricultural specialists, and boys' and girls' clubs, and further by means of extension courses, publications, and correspondence.

COUNTY AGRICULTURAL AGENTS.

A county agricultural agent is not a farmers' and stockman's adviser, but rather a collector and distributor of valuable information along agricultural lines. He is a general carrier of the best farm and ranch practices from one farmer and rancher to another. He stands ready at all times to furnish or secure for his constituents, information on any agricultural problem which may arise. He aids his farmers and stockmen in securing better markets for their products, in eradicating live stock diseases, in treating seed against smut, in testing seeds, in securing better seed and better live stock, in constructing silos and other farm buildings, in pruning, spraying, etc. He conducts, with the aid of specialists from the College, farmers' and

stockmen's short courses, he perfects organizations for them and also for the boys and girls of the county, for the purpose of giving practical instructions and demonstrations in agriculture, in order that the net income from the farm and ranch may be increased.

A county agent is a man well trained, both in the science and practice of agriculture, and one who has many sources of information at his disposal. It might be said that he is the link in the chain that connects the farmers and stockmen with their State Agricultural College and the United States Department of Agriculture. He works solely for their best interests. County agents are joint representatives of the United States Department of Agriculture, the New Mexico College of Agriculture and Mechanic Arts and the county in which they work, and are supported by these three institutions. County agents spend on an average one day a week in the office and the balance of the time in the field rendering service to their constituents.

Twenty-four counties have taken advantage of the co-operative agreement entered into by the United States Department of Agriculture and the New Mexico College of Agriculture and Mechanic Arts for the employment of county agricultural agents as provided for by the Federal Smith-Lever Act of 1914 and Senate Bill No. 3, passed at the extraordinary session of the Legislature of the State of New Mexico, 1917. In accordance with the provisions of this state law, boards of county commissioners are authorized, upon petition of one hundred bonafide tax payers to make appropriations for the maintenance of co-operative extension work in agriculture and home economics, and for each dollar so provided by the county, the State appropriates a like amount. In addition to these county and state appropriations the United States Department of Agriculture makes an annual appropriation, and grants the county agent the franking privilege which permits all their official mail to be carried free of postage.

The county commissioners appoint a committee which, in co-operation with a representative of the Extension Service, se-

lects the man to be employed as county agricultural agent from nominations made by the Extension Service. Counties and individuals interested can receive more detailed information relative to this work by writing the Extension Director at State College.

COUNTY HOME DEMONSTRATION AGENTS.

The future development of New Mexico is dependent very largely on the prosperity and happiness of its agricultural people. This being true, it is a part of the work of the Extension Service to aid women of the State in the organization of homemaking clubs. These organizations are intended to furnish both education and recreation for the people on the farm.

Through an extensive correspondence that is carried on, information and suggestions are available for individuals or clubs to help them in solving problems of food preparation, sanitation, farm water system, household conveniences, planning a home, preparing topics for club study, etc. This work is further developed through free demonstrations and addresses given before homemakers' clubs, parent-teachers' associations and other organizations of a similar kind.

A home demonstration agent is a scientifically trained homemaker and housekeeper whose office it is to carry the home economics work of the New Mexico College of Agriculture and Mechanic Arts in a practical form to every woman in the county in which the agent is employed. She organizes clubs in the county in order that the farm women may, in comradeship with their neighbors and under the stimulating direction of the demonstrator, attain such breadth of power through organized effort that the homes of her county shall be recognized for their elevated standard of living.

Five counties, viz., Colfax, Chaves, Grant, Dona Ana and Bernalillo, have completed the necessary organization and now have home demonstration agents. The State Leader will visit, as far as possible, counties wishing to organize for a county demonstrator and will explain the work and help them perfect

the organization. This is a new and very useful work and is conducted by the co-operation of three agencies: the county in which the demonstrator is located, the Extension Service of the New Mexico College of Agriculture and Mechanic Arts, and the United States Department of Agriculture. Counties interested in securing the services of a home demonstration agent should communicate with the State Leader.

SPECIALISTS.

State Dairy Extension Agent. The State Agent in Dairy Extension Work gives field instructions and demonstrations among the dairymen of the State along the lines of silo, barn, and milk-house construction, dairy breeding, feeding, herd records, sanitary milk production, organization, and marketing. He assists in the location and selection of better dairy stock, and especially in pure bred dairy sires.

Extension Veterinarian. The Extension Veterinarian is prepared to give instructions and information on the control of live stock diseases. He co-operates with the county agents in conducting educational campaigns on the prevention and eradication of disease. Particular emphasis is laid on the control and prevention of hog cholera.

Field Agent in Marketing. The Field Agent in Marketing makes a study of market conditions and is prepared to give to the farmers of the State information relative to markets, and the best way in which to market their crops. Considerable attention is given to the standardization of crops and proper preparation of the products for market. He co-operates with the county agents in keeping the farmers posted relative to the market demands, and where they can dispose of their products to the best advantage.

Extension Agronomist. The Extension Agronomist is prepared to give information to the farmers of the State on the value of good seed, seed selection, seed germination, cultural methods, and particularly seed-bed preparation, rotation of crops, adaptability of crops, standardization of crops, smuts and their control, and soil types and their management.

BOYS' AND GIRLS' CLUBS.

Through the State Agent in Club Work, industrial clubs are organized for the boys and girls of the State between the ages of ten and eighteen years. Through these clubs the boys and girls are taught improved methods in farming and home building, how to grow and market crops, how to raise and manage farm animals, and how to eliminate waste on the farm. Lessons are prepared by the State Agent and sent to all club members.

EXTENSION COURSES.

Short Courses. Arrangements will be made through the county agents and county home demonstrators to conduct two or three day short courses in the communities throughout the State where there is a demand for them. Communities desiring such a short course should take the matter up with their county agent or county home demonstrator.

Demonstrations. As far as funds will permit, communities desiring help will be furnished with competent speakers to give lectures and demonstrations dealing with the various lines of agriculture and home making, such as pruning, spraying, stock judging, the canning of fruits and vegetables, sanitation, labor saving devices, etc.

Farmers', Stockmen's, and Homemakers' Week. Each year during the second week in January, there is held at the College, a Farmers', Stockmen's and Homemakers' Conference. Practical lectures and demonstrations dealing with almost every line of agriculture and home economics are given by men and women, both from the College and from outside of the State, who have had excellent training and wide experience in their respective lines.

PUBLICATIONS AND CORRESPONDENCE.

In addition to the bulletins published by the Experiment Station, the Extension Service publishes a number of popular bulletins and circulars dealing with the various phases of agriculture and home economics. Among these is the New Mexico Farm Courier, a monthly publication with a large circulation.

In it appears, each month, timely articles on agriculture and home economics of local interest to the farmers, stockmen, and homemakers of the State. These publications, as well as those of the Experiment Station, may be had free of charge by anyone desiring them. Further information relative to any line of Extension Work may be had by addressing the Extension Director of the New Mexico College of Agriculture and Mechanic Arts, State College, New Mexico. At all times the Extension Service is ready and willing to give information through correspondence.

Instructional Service

Instructional Service

The instructional service as has been indicated on an earlier page of this catalog, involves the greater part of the work carried on at the College. It embraces all college and secondary courses. The College proper comprises the School of Agriculture, the School of Engineering, and the School of General Science. The department of home economics, although it offers a more or less independent course of instruction, is regarded as a part of the School of General Science. Further information concerning the individual departments is given under the separate schools.

OUTLINES OF COURSES OF INSTRUCTION.

The outlines of the courses of instruction on the following pages are offered as suggestive of the general scope of the various lines of work and study open to election. The numbers preceding the several subjects refer to the description of these subjects in the body of the catalog. Numbers following the subjects indicate the time and credit allotted to each of them, laboratory periods being marked P, two of which count as one credit hour.

OUTLINE OF COURSE IN AGRICULTURE

FRESHMAN

First Term

Eng. 1. Rhetoric and Composition, 3.
Chem. 1. General Chemistry, 3+4P.
Biol. 1. General Botany, 3+4P.
Phys. 11. Agricultural Physics, 3+2P.
A. H. 1. Types of Livestock, 2+4P.

Second Term

Eng. 2. Rhetoric and Composition, 3.
Chem. 2. General Chemistry, 3+4P.
A. E. 2. Farm Motors, 3+4P.
P. H. 2. General Poultry, 2+4P.
Hort. 12. Plant Propagation, 2+4P.

Third Term

Eng. 3. Rhetoric and Composition, 3.
Chem. 3. General Chemistry, 3+4P.
Biol. 3. General Botany, 3+4P.
A. H. 3. Types of Livestock, 2+4P.
Agron. 3a. Farm Machinery, 3+2P.
A. E. 3b. Farm Mechanics, 1+6P.

SOPHOMORE

Chem. 12. Advanced Organic Chemistry, 2+4P.
Biol. 12. General Zoology, 2+4P.
Agron. 12. Field Crops, 4+2P.
Hort. 22. Vegetable Gardening, 4+4P.

Chem. 53. Agricultural Chemistry, 2+4P.
Biol. 23. Physiology, 3+2P.
Agron. 13. Forage Crops, 4+2P.
Dairy. 13. Farm Dairying, 3+4P.

JUNIOR

Agron. 31. Soil Physics, 3+4P.
A. H. 11. Stock Feeding, 5.
Biol. 41. Introductory Entomology, 2+4P.

Biol. 43. Applied Entomology, 2+4P.
Hort. 33. Pruning, 2+2P.

Agron. 33. Dry Farming, 3.
I. E. 33. Principles of Irrigation, 3+4P.
Electives.

Eng. 12. Advanced Composition, 3.
Dairy. 22. Dairy Manufactures, 3+6P.
A. H. 22. Herd Books, 1+4P.
Dairy. 32. Milk Production, 3+3P.

Biol. 53. Plant Pathology, 3+4P.
Eng. 13. Advanced Composition, 3.
A. H. 23. Stock Judging, 3+4P.

Electives.

SENIOR

Econ. 1. Principles of Economics, 5.
Agron. 41. Farm Management, 4+2P.
Hort. 41. Plant Breeding, 5.

A. H. 33. Animal Breeding, 5.
Agron. 43. Farm Cost Accounts, 1+4P.
Thesis, 5.

Electives.

Hort 51. Advanced Horticulture, 3.
P. H. 11. Advanced Poultry, 5+10P.
Dairy. 41. Breeds of Dairy Cattle, 4P.
A. H. 31. Stock Judging, 3+4P.

Electives.

A. H. 43. Types and Market Classes, 3+4P.
I. E. 43. Irrigation Institutions, 3.
P. H. 13. Advanced Poultry, 5+10P.
Hort. 53. Viticulture and Nut Culture, 3.
Dairy. 43. Dairy Judging, 4P.

OUTLINE OF TRAINING COURSE FOR TEACHERS OF AGRICULTURE

FRESHMAN

First Term.

Eng. 1. Rhetoric and Composition, 3.
Chem. 1. General Chemistry, 3+4P.
Biol. 1. General Botany, 3+4P.
Phys. 11. Agricultural Physics, 3+2P.
A. H. 1. Types of Livestock, 2+4P.

Second Term.

Eng. 2. Rhetoric and Composition, 3.
Chem. 2. General Chemistry, 3+4P.
A. E. 2. Farm Motors, 3+4P.
P. H. 2. General Poultry, 2+4P.
Hort. 12. Plant Propagation, 2+4P.

Third Term.

Eng. 3. Rhetoric and Composition, 3.
Chem. 3. General Chemistry, 3+4P.
Biol. 3. General Botany, 3+4P.
A. H. 3. Types of Livestock, 2+4P.
Agron. 3a. Farm Machinery, 3+2P.
A. E. 3b. Farm Mechanics, 1+6P.

SOPHOMORE

Chem. 11. Organic Chemistry, 4.
C. E. 1. Plane Surveying, 2+4P.
Biol. 11. General Zoology, 2+4P.
Hort. 21. Floriculture and Landscape Gardening, 2+2P.
Hort. 11. Canning, 8P.

Chem. 12. Advanced Organic Chemistry, 2+4P.
Biol. 12. General Zoology, 2+4P.
Agron. 12. Field crops, 4+2P.
Hort. 22. Vegetable Gardening, 4+4P.

Chem. 53. Agricultural Chemistry, 2+4P.
Biol. 23. Physiology, 3+2P.
Agron. 13. Forage Crops, 4+2P.
Dairy. 13. Farm Dairying, 3+4P.

JUNIOR

Agron. 31. Soil Physics, 3+4P.
A. H. 11. Stock Feeding, 5.
Biol. 41. Introductory Entomology, 2+4P.
V. E. 1. General Psychology, 5.

Agron. 32. Soil Fertility, 3+4P.
A. H. 12. Veterinary Science, 5.
Hort. 32. Fruit Growing, 4+2P.
V. E. 2a. Educational Psychology, 5.
V. E. 2b. Principles of Education, 5.

Biol. 43. Applied Entomology, 2+4P.
Hort. 43. Pruning, 2+2P.
Agron. 43. Dry Farming, 3.
I. E. 33. Principles of Irrigation, 3+4P.
V. E. 3. Rural Education, 5.

SENIOR

Econ. 1. Principles of Economics, 5.
Agron. 41. Farm Management, 4+2P.
Hort. 41. Plant Breeding, 5.
V. E. 11. History and Theory of Vocational Education, 3.

Econ. 2. Rural Sociology, 3.
Geol. 2. General Geology, 5.
Agron. 42. Farm Management, 4+2P.
V. E. 12. Teaching of Agriculture, 3.

Econ. 3. Rural Economics, 3.
A. H. 33. Animal Breeding, 5.
Agron. 23. Cost Accounts, 1+4P.
V. E. 13. Teaching of Agriculture, 3.
Thesis, 5.

OUTLINE OF COURSE IN CIVIL ENGINEERING

FRESHMAN

First Term.

Eng. 1. Rhetoric and Composition, 3.
Chem. 1. General Chemistry, 3+4P.
Fr. 1. Elementary French, 4, or
Span. 1. Elementary Spanish, 4.
Math. 1. Trigonometry, 5.
M. E. 1. Engineering Drawing, 4P.
M. E. 91. Woodwork, 4P.

Second Term.

Eng. 2. Rhetoric and Composition, 3.
Chem. 2. General Chemistry, 3+4P.
Fr. 2. Elementary French, 4, or
Span. 2. Elementary Spanish, 4.
Math. 2. Algebra, 5.
M. E. 2. Engineering Drawing, 4P.
M. E. 92. Woodwork and Pattern Making, 4P.

Third Term.

Eng. 3. Rhetoric and Composition, 3.
Chem. 3. General Chemistry, 3+4P.
Fr. 3. Elementary French, 4, or
Span. 3. Elementary Spanish, 4.
Math. 3. Analytic Geometry, 5.
M. E. 3. Engineering Drawing, 4P.
M. E. 93. Pattern Making, 4P.

SOPHOMORE

Math. 31. Calculus, 5.

Phys. 1. College Physics, 3+4P.

C. E. 1. Plane Surveying, 1+6P.

M. E. 101. Machine Shop, 4P.

M. E. 11. Descriptive Geometry, 3P.

Math. 12. Solid Analytic Geometry, 1.

Math. 32. Calculus, 4.

Phys. 2. College Physics, 3+4P.

M. E. 52. Elements of Power Engineering, 3.

M. E. 102. Forge Shop, 4P.

M. E. 12. Descriptive Geometry, 3P.

Math. 33. Calculus, 5.

Phys. 3. College Physics, 3+4P.

M. E. 23. Statics, 5

C. E. 3. Topographic Surveying, 2+6P.

JUNIOR

Econ. 1. Principles of Economics, 5.

M. E. 21. Strength of Materials, 3.

E. E. 1. Elements of Electrical Engineering, 3.

C. E. 21. Graphic Statics, 6P.

C. E. 11. Advanced Surveying, 2+4P.

Econ. 2. Rural Sociology, 3.

M. E. 22. Strength of Materials, 3.

E. E. 2. Elements of Electrical Engineering, 3.

C. E. 12. Railroad and Canal Surveying, 2+6P.

C. E. 22. Stresses, 4.

M. E. 43. Dynamics, 3.

I. E. 3. Hydraulics, 4.

E. E. 33. Electrical Engineering Laboratory, 6P.

C. E. 23. Structural Design, 6P.

C. E. 43. Reinforced Concrete, 4.

SENIOR

Eng. 11. Advanced Composition, 3.

M. E. 81. Mechanical Engineering Laboratory, 6P.

C. E. 31. Structural Design, 6P.

I. E. 21. Water Power, 4.

C. E. 41. Sewerage, 3.

Eng. 12. Advanced Composition, 3.

C. E. 42. Materials Laboratory, 2+6P.

Geol. 2. General Geology, 5.

C. E. Bridge Design, 6P.

Thesis, 2.

C. E. 63. Business Law for Engineers, 2.

C. E. 33. Bridge Design, 4P.

I. E. 23. Water Supply, 3.

C. E. 53. Highway Engineering, 3.

Thesis, 3.

OUTLINE OF COURSE IN ELECTRICAL ENGINEERING

FRESHMAN

First Term.

Eng. 1. Rhetoric and Composition, 3.
Chem. 1. General Chemistry, 3+4P.
Fr. 1. Elementary French, 4, or
Span. 1. Elementary Spanish, 4.
Math. 1. Trigonometry, 5.
M. E. 1. Engineering Drawing, 4P.
M. E. 91. Woodwork, 4P.

Second Term.

Eng. 2. Rhetoric and Composition, 3.
Chem. 2. General Chemistry, 3+4P.
Fr. 2. Elementary French, 4, or
Span. 2. Elementary Spanish, 4.
Math. 2. Algebra, 5.
M. E. 2. Engineering Drawing, 4P.
M. E. 92. Pattern Making, 4P.

SOPHOMORE

Math. 31. Calculus 5.
Phys. 31. College Physics, 3+4P.
C. E. 1. Plane Surveying, 1+6P.
M. E. 101. Machine Shop, 4P.
M. E. 11. Descriptive Geometry, 3P.

Math. 12. Solid Analytic Geometry, 1.
Math. 32. Calculus, 4.
Phys. 2. College Physics, 3+4P.
M. E. 52. Elements of Power Engineering,
5.
M. E. 102. Forge Shop, 4P.
M. E. 12. Descriptive Geometry, 3P.

JUNIOR

Econ. 1. Principles of Economics, 5.
M. E. 21. Strength of Materials, 3.
E. E. 1. Elements of Electrical Engineering,
3.
C. E. 21. Graphic Statics, 6P.
M. E. 41. Mechanism, 3+4P.

Econ. 2. Rural Sociology, 3.
M. E. 22. Strength of Materials, 3.
E. E. 2. Elements of Electrical Engineering,
3.
M. E. 42. Machine Design, 4P.
M. E. 72. Mechanical Engineering Laboratory,
6P.
M. E. 62. Thermodynamics, 5.

M. E. 43. Dynamics, 3.
E. E. 3. Hydraulics, 4.
E. E. 33. Electrical Engineering Laboratory 6P.
E. E. 3. Dynamos and Electric Machinery, 3.
M. E. 63. Refrigeration and Heating, 1+6P

SENIOR

Eng. 11. Advanced Composition, 3.
M. E. 81. Mechanical Engineering Laboratory,
6P.
E. E. 31. Electrical Engineering Laboratory,
6P.
E. E. 11. Alternating Current Theory, 5.
M. E. 51. Power Plant Engineering, 4.

Eng. 12. Advanced Composition, 3.
C. E. 42. Materials Laboratory, 2+6P.
E. E. 32. Electrical Engineering Laboratory,
6P.
E. E. 12. Alternating Current Theory, 5.
Thesis, 2.

C. E. 63. Business Law for Engineers, 2.
E. E. 23. Electrical Engineering Design,
1+6P.
E. E. 13. Electrical Power Transmission,
4.
E. E. Elective, 3.
Thesis, 3.

Third Term.

Eng. 3. Rhetoric and Composition, 3.
Chem. 3. General Chemistry, 3+4P.
Fr. 3. Elementary French, 4, or
Span. 3. Elementary Spanish, 4.
Math. 3. Analytic Geometry, 5.
M. E. 3. Engineering Drawing, 4P.
M. E. 93. Pattern Making, 4P.

Math. 33. Calculus, 5.
Phys. 3. College Physics, 3+4P.
M. E. 23. Statics, 5.
M. E. 103. Machine Shop, 4P.
M. E. 13. Machine Drawing, 4P.

OUTLINE OF COURSE IN IRRIGATION ENGINEERING

FRESHMAN

First Term.

Eng. 1. Rhetoric and Composition, 3.
Chem. 1. General Chemistry, 3+4P.
Fr. 1. Elementary French, 4, or
Span. 1. Elementary Spanish, 4.
Math. 1. Trigonometry, 5.
M. E. 1. Engineering Drawing, 4P.
M. E. 91. Woodwork, 4P.

Second Term.

Eng. 2. Rhetoric and Composition, 3.
Chem. 2. General Chemistry, 3+4P.
Fr. 2. Elementary French, 4, or
Span. 2. Elementary Spanish, 4.
Math. 2. Algebra, 5.
M. E. 2. Engineering Drawing, 4P.
M. E. 92. Pattern Making, 4P.

Third Term.

Eng. 3. Rhetoric and Composition, 3.
Chem. 3. General Chemistry, 3+4P.
Fr. 3. Elementary French, 4, or
Span. 3. Elementary Spanish, 4.
Math. 3. Analytic Geometry, 5.
M. E. 3. Engineering Drawing, 4P.
M. E. 93. Pattern Making, 4P.

SOPHOMORE

Math. 31. Calculus, 5.
Phys. 1. College Physics, 3+4P.
C. E. 1. Plane Surveying, 1+6P.
M. E. 101. Machine Shop, 4P.

Math. 12. Solid Analytic Geometry, 1.
Math. 32. Calculus, 4.
Phys. 2. College Physics, 3+4P.
M. E. 52. Elements of Power of Engineering, 5.
M. E. 102. Forge Shop, 4P.

Math. 33. Calculus, 5.
Phys. 3. College Physics, 3+4P.
M. E. 23. Statics, 5.
C. E. 3. Topographic Surveying, 2+6P.

JUNIOR

Econ. 1. Principles of Economics, 5.
M. E. 21. Strength of Materials, 3.
E. E. 1. Elements of Electrical Engineering, 3.
C. E. 21. Graphic Statics, 6P.
Agron. 31. Soils, 3.
C. E. 11. Advanced Surveying, 2+4P.

Econ. 2. Rural Sociology, 3.
M. E. 22. Strength of Materials, 3.
E. E. 2. Elements of Electrical Engineering, 3.
Agron. 32. Soils, 3.
C. E. 12. Railroad and Canal Surveys, 2+6P

M. E. 43. Dynamics, 3.
I. E. 3. Hydraulics, 4.
E. E. 33. Electrical Engineering Laboratory, 6P.
I. E. 33. Principles of Irrigation, 3+4P.
C. E. 43. Reinforced Concrete, 4.

SENIOR

Eng. 11. Advanced Composition, 3.
M. E. 81. Mechanical Engineering Laboratory, 6P.
I. E. 11. Irrigation Engineering, 5.
I. E. 31. Drainage, 3.
I. E. 21. Water Power, 4.

Eng. 12. Advanced Composition, 3.
C. E. 42. Materials Laboratory, 2+6P.
Geol. 2. General Geology, 5.
I. E. 12. Irrigation Design, 8P.
Thesis, 2.

C. E. 63. Business Law for Engineers, 2.
I. E. 43. Irrigation Institutions, 3.
I. E. 23. Water Supply, 3.
I. E. 13. Irrigation Design, 8P.
Thesis, 3.

OUTLINE OF COURSE IN MECHANICAL ENGINEERING

FRESHMAN

First Term.

Eng. 1. Rhetoric and Composition, 3.
Chem. 1. General Chemistry, 3+4P.
Fr. 1. Elementary French, 4, or
Span. 1. Elementary Spanish, 4.
Math. 1. Trigonometry, 5.
M. E. 1. Engineering Drawing, 4P.
M. E. 91 Woodwork, 4P.

Math. 31. Calculus, 5.

Phys. 31. College Physics, 3+4P.

C. E. 1. Plane Surveying, 1+6P.

M. E. 101. Machine Shop, 4P.

M. E. 11. Descriptive Geometry, 3P.

Econ. 1. Principles of Economics, 5.

M. E. 21. Strength of Materials, 3.

E. E. 1. Elements of Electrical Engineering, 3.

C. E. 21. Graphic Statics, 6P.

M. E. 41. Mechanism Mechanical and Electrical Engineering, 3+4P.

Eng. 11. Advanced Composition, 3.

M. E. 81. Mechanical Engineering Laboratory, 6P.

M. E. 71. Heating and Ventilating, 4.

M. E. 31. Machine Design, 4P.

M. E. 51. Power Plant Engineering, 4.

Second Term.

Eng. 2. Rhetoric and Composition, 3.
Chem. 2. General Chemistry, 3+4P.
Fr. 2. Elementary French, 4, or
Span. 2. Elementary Spanish, 4.
Math. 2. Algebra, 5.
M. E. 2. Engineering Drawing, 4P.
M. E. 92 Pattern Making, 4P.

Math. 12. Solid Analytic Geometry, 1.

Math. 32. Calculus, 4.

Phys. 32. College Physics, 3+4P.

M. E. 52. Elements of Power Engineering, 5

M. E. 102. Forge Shop, 4P.

M. E. 12. Descriptive Geometry, 3P.

JUNIOR

Econ. 2. Rural Sociology, 3.

M. E. 22. Strength of Materials, 3.

E. E. 2. Elements of Electrical Engineering, 3.

M. E. 42. Machine Design, 4P.

M. E. 72. Mechanical Engineering Laboratory, 6P.

M. E. 62. Thermodynamics, 5.

Eng. 12. Advanced Composition, 3.

C. E. 42. Materials Laboratory, 2+6P.

M. E. 82. Mechanical Engineering Laboratory, 6P.

M. E. 32. Steam Engine Design, 4P.

M. E. 112. Shop Methods, 3.

Thesis, 2.

Third Term.

Eng. 3. Rhetoric and Composition, 3.
Chem. 3. General Chemistry, 3+4P.
Fr. 3. Elementary French, 4, or
Span. 3. Elementary Spanish, 4.
Math. 3. Analytic Geometry, 5.
M. E. 3. Engineering Drawing, 4P.
M. E. 93. Pattern Making, 4P.

Math. 33. Calculus, 5.

Phys. 3. College Physics, 3+4P.

M. E. 23. Statics, 5.

M. E. 103. Machine Shop, 4P.

M. E. 13. Machine Drawing, 4P.

M. E. 43. Dynamics, 3.

I. E. 3. Hydraulics, 4.

E. E. 33. Electrical Engineering Laboratory, 6P.

E. E. 3. Dynamos and Electric Machinery, 3

M. E. 63. Refrigeration and Heating, 1+6P.

C. E. 63. Business Law for Engineers, 2.

M. E. 53. Shop Organization, 3.

M. E. 33. Oil Engine Design, 4P.

Chem. 83. Metallurgy, 4.

Thesis, 3.

OUTLINE OF COURSE IN HOME ECONOMICS

FRESHMAN

First Term.

Eng. 1. Rhetoric and Composition, 3.
Chem. 1. General Chemistry, 3+4P.
Biol. 1. General Botany, 3+4P.
Fr. 1. Elementary French, 4, or
Span. 1. Elementary Spanish, 4.
H. E. 1. Sewing I, 2+6P.

Second Term.

Eng. 2. Rhetoric and Composition, 3.
Chem. 2. General Chemistry, 3+4P.
H. E. 42. Food I, 2+6P.
Fr. 2. Elementary French, 4, or
Span. 2. Elementary Spanish, 4.
Hort. 2. Gardening, 2+2P.

SOPHOMORE

Eng. 11. Advanced Composition, 3.
Chem. 21. Household Chemistry, 3+2P.
Biol. 11. General Zoology, 2+4P.
H. E. 51. Foods II, 2+6P.
Fr. 11. French Readings, 3, or
Span. 11. Spanish Readings, 3.

Eng. 12. Advanced Composition, 3.
Chem. 22. Household Chemistry, 3+2P.
Biol. 12. General Zoology, 2+4P.
H. E. 52. Foods III, 2+4P.
Fr. 12. French Readings, 3, or
Span. 12. Spanish Readings, 3.

JUNIOR

Econ. 1. Principles of Economics, 5.
Hist. 1. Modern Europe, 5, or
Hist. 11. American History to 1815, 5.
Phys. 21. Household Physics, 2+4P.
Eng. 31. Shakespeare, 3, or
Eng. 21. 19th Century Poets, 3.
V. E. 1. General Psychology, 5.

Econ. 2. Rural Sociology, 3.
Hist. 2. Modern Europe, 5, or
Hist. 12. American History since 1815, 5.
Biol. 32. Bacteriology, 3+4P.
Eng. 32. Shakespeare, 3, or
Eng. 22. 19th Century Poets, 3.

SENIOR

Hist. 1. Modern Europe, 5, or
Hist. 11. American History to 1815, 5.
H. E. 71. Dietetics II, 1+2P.
H. E. 81. Home Nursing, 3.
H. E. 21. House Decoration, 3+4P.

Hist. 2. Modern Europe, 5, or
Hist. 12. American History since 1815, 5.
H. E. 72. Marketing and Serving, 1+4P.
H. E. 22. Basketry, 4P.
H. E. 12. Dressmaking and Tailoring, 1+8P

Third Term.

Eng. 3. Rhetoric and Composition, 3.
Chem. 3. General Chemistry, 3+4P.
Biol. 3. General Botany, 3+4P.
Fr. 3. Elementary French, 4, or
Span. 3. Elementary Spanish, 4.
Dairy. 3a. Dairying, 3+2P.
P. H. 3b. Poultry Husbandry, 3+2P.
Eng. 13. Advanced Composition, 3.
Chem. 23. Sanitary Chemistry, 3+2P.
Biol. 23. Physiology, 3+2P.
H. E. 3. Sewing II, 2+6P.
Fr. 13. French Readings, 3, or
Span. 13. Spanish Readings, 3.

H. E. 63. Dietetics I, 2+4P.
H. E. 13. Millinery, 8P.
Eng. 33. Shakespeare, 3, or
Eng. 23. 19th Century Poets, 3.
Biol. 83. Household Entomology, 3.
V. E. 3. Rural Education, 5.

H. E. 73. Household Management, 3.
H. E. 83. Household Sanitation, 2.
H. E. 33. Textiles, 2+2P.
Thesis, 5.

OUTLINE OF TRAINING COURSE FOR TEACHERS OF HOME ECONOMICS

FRESHMAN

First Term.

Eng. 1. Rhetoric and Composition, 3.
Chem. 1. General Chemistry, 3+4P.
Biol. 1. General Botany, 3+4P.
Fr. 1. Elementary French, 4, or
Span. 1. Elementary Spanish, 4.
H. E. 1. Sewing I, 2+6P.

Second Term.

Eng. 2. Rhetoric and Composition, 3.
Chem. 2. General Chemistry, 3+4P.
H. E. 42. Foods I, 2+6P.
Fr. 2. Elementary French, 4, or
Span. 2. Elementary Spanish, 4.
Hort. 2. Gardening, 2+2P.

Third Term.

Eng. 3. Rhetoric and Composition, 3.
Chem. 3. General Chemistry, 3+4P.
Biol. 3. Elementary Botany, 3+4P.
Fr. 3. Elementary French, 4, or
Span. 3. Elementary Spanish, 4.
Dairy. 3a. Dairying, 3+2P.
P. H. 3b. Poultry Husbandry, 3+2P.

SOPHOMORE

Eng. 11. Advanced Composition, 3.
Chem. 21. Household Chemistry, 3+2P.
Biol. 11. General Zoology, 2+4P.
H. E. 51. Foods II, 2+6P.
Fr. 11. French Readings, 3, or
Span. 11. Spanish Readings, 3.

Eng. 12. Advanced Composition, 3.
Chem. 22. Household Chemistry, 3+2P.
Biol. 12. General Zoology, 2+4P.
H. E. 52. Foods III, 2+4P.
Fr. 12. French Readings, 3, or
Span. 12. Spanish Readings, 3.

Eng. 13. Advanced Composition, 3.
Chem. 23. Sanitary Chemistry, 3+2P.
Biol. 23. Physiology, 3+2P.
H. E. 3. Sewing II, 2+6P.
Fr. 13. French Readings, 3, or
Span. 13. Spanish Readings, 3.

JUNIOR

Econ. 1. Principles of Economics, 5.
Hist. 1. Modern Europe, 5, or
Hist. 11. American History to 1815, 5.
Phys. 21. Household Physics, 2+4P.
Eng. 31. Shakespeare, 3, or
Eng. 21. 19th Century Poets, 3.
V. E. 1. General Psychology, 5.

Econ. 2. Rural Sociology, 3.
Hist. 2. Modern Europe, 5, or
Hist. 12. American History since 1815, 5
Biol. 32. Bacteriology, 3+4P.
Eng. 32. Shakespeare, 3, or
Eng. 22. 19th Century Poets, 3.
V. E. 2a. Educational Psychology, 5.
V. E. 2b. Principles of Education, 5.

H. E. 63. Dietetics I, 2+4P.
H. E. 13. Millinery, 8P.
Eng. 33. Shakespeare, 3, or
Eng. 23. 19th Century Poets, 3.
Biol. 83. Household Entomology, 3.
V. E. 3. Rural Education, 5.

SENIOR

Hist. 1. Modern Europe, 5, or
Hist. 11. American History to 1815, 5.
H. E. 71. Dietetics II, 1+2P.
H. E. 81. Home Nursing, 3.
H. E. 21. House Decoration, 3+4P.
V. E. 11. History and Theory of Vocational Education, 3.

Hist. 2. Modern Europe, 5, or
Hist. 12. American History since 1815, 5.
H. E. 72. Marketing and Serving, 1+4P.
H. E. 22. Basketry, 4P.
H. E. 12. Dressmaking and Tailoring, 1+8P
V. E. 22. Teaching of Home Economics, 3.

H. E. 73. Household Management, 3.
H. E. 83. Household Sanitation, 2.
H. E. 33. Textile S, 2+2P.
V. E. 23. Teaching of Home Economics, 3.
Thesis, 5.

OUTLINE OF COURSE IN GENERAL SCIENCE

FRESHMAN

First Term.

Eng. 1. Rhetoric and Composition, 3.
Math. 1. Plane Trigonometry, 5.
Chem. 1. General Chemistry, 3+4P.
Biol. 1. General Botany, 3+4P.
Fr. 1. Elementary French, 4, or
Span. 1. Elementary Spanish, 4.

Second Term.

Eng. 2. Rhetoric and Composition, 3.
Math. 2. College Algebra, 5.
Chem. 2. General Chemistry, 3+4P.
Fr. 2. Elementary French, 4, or
Span. 2. Elementary Spanish, 4.

Third Term.

Eng. 3. Rhetoric and Composition, 5.
Math. 3. Analytic Geometry, 5.
Chem. 3. General Chemistry, 3+4P.
Biol. 3. General Botany, 3+4P.
Fr. 3. Elementary French, 4, or
Span. 3. Elementary Spanish, 4.

SOPHOMORE

Eng. 11. Advanced Composition, 3.
Chem. 11. Organic Chemistry, 4.
Biol. 11. General Zoology, 2+4P.
Phys. 1. College Physics, 3+4P.
Fr. 11. French Readings, 3, or
Span. 11. Spanish Readings, 3.

Eng. 12. Advanced Composition, 3.
Chem. 12. Advanced Organic Chemistry, 2+4P.
Biol. 12. General Zoology, 2+4P.
Phys. 2. College Physics, 3+4P.
Fr. 12. French Readings, 3, or
Span. 12. Spanish Readings, 3.

Eng. 13. Advanced Composition, 3.
Chem. 13. Advanced Organic Chemistry, 2+4P.
Biol. 23. Physiology, 3+2P.
Phys. 3. College Physics, 3+4P.
Fr. 13. French Readings, 3, or
Span. 13. Spanish Readings, 3.

JUNIOR

Econ. 1. Principles of Economics, 5.
Hist. 11. American History to 1815, 5, or
Hist. 1. Modern Europe, 5.
Eng. 21. Nineteenth Century Poets, 3, or
Eng. 31. Shakespeare, 3.
Elective.

Econ. 2. Rural Sociology, 3.
Hist. 12. American History since 1815, 5, or
Hist. 2. Modern Europe, 5.
Eng. 22. Nineteenth Century Poets, 3, or
Eng. 32. Shakespeare, 3.
Elective.

Econ. 3. Rural Economics, 3. Poets, 3, or
Eng. 23. Nineteenth Century Poets, 3, or
Eng. 33. Shakespeare, 3.
Astron. 3. Astronomy, 5.
Elective.

SENIOR

V. E. 1. General Psychology, 5.
Hist. 11. American History to 1815, 5, or
Hist. 1. Modern Europe, 5.
Elective.

Geol. 2. General Geology, 5.
V. E. 3. Rural Education, 5.
Hist. 12. American History since 1815, 5, or
Hist. 2. Modern Europe, 5.
Elective.

Geol. 3. Historical Geology, 5.
Thesis, 5.
Elective.

OUTLINE OF COURSE IN PRE-AGRICULTURE

FIRST YEAR

First Term.

Eng. 01. Composition and Literature, 5.
 Math. 01. Elementary Algebra, 5.
 Agron. 01. Elementary Agriculture, 4+2P.
 M. E. 011. Manual Training, 6P.
 M. E. 01. Free-hand Drawing, 4P.

Second Term.

Eng. 02. Composition and Literature, 5.
 Math. 02. Elementary Algebra, 5.
 Agron. 02. Elementary Agriculture, 4+2P.
 M. E. 012. Manual Training, 6P.
 M. E. 02. Mechanical Drawing, 4P.

SECOND YEAR

Eng. 011. Composition and Literature, 5.
 Math. 011. Plane Geometry, 5.
 Biol. 01. Elementary Zoology, 4+2P.
 Com. 051. Industry Geography, 5.

Eng. 012. Composition and Literature, 5.
 Math. 012. Plane Geometry, 5.
 A. H. 02. Elementary Animal Husbandry, 4+2P.
 Com. 052. Industrial Geography, 5.

THIRD YEAR

Eng. 021. Grammar and Literature, 5.
 Hist. 01. General History, 5.
 Span. 01. Beginning Spanish, 5.
 Com 011. Cost Accounting, 10P.

Eng. 022. Grammar and Literature, 5.
 Hist. 02. General History, 5.
 Span. 02. Beginning Spanish, 5.
 Com. 012. Farm Accounts, 1+8P.

Third Term.

Eng. 03. Composition and Literature, 5.
 Math. 03. Elementary Algebra, 5.
 Geol. 03. Physiography, 4+2P.
 M. E. 013. Manual Training, 6P.
 M. E. 03. Mechanical Drawing, 4P.

Eng. 013. Composition and Literature, 5.
 Math. 013. Plane Geometry, 5.
 Biol. 03. Elementary Botany, 3+4P.
 Com. 053. Commercial Law, 5.

Eng. 023. Grammar and Literature, 5.
 Hist. 03. General History, 5.
 Span. 03. Beginning Spanish, 5.
 Dairy. 03a. Dairying, 3+2P.
 P. H. 03b. Elementary Poultry Husbandry, 3+2P.

FOURTH YEAR

Eng. 031. General English Literature, 5.
 Hist. 011. American History, 5.
 Agron. 011. Principles of Agronomy, 4+2P.
 A. E. 071. Farm Carpentry, 4P.
 Span. 011. Second Year Spanish, 5.
 Chem. 01. Elementary Chemistry, 4+2P.

Eng. 032. General English Literature, 5.
 Hist. 012. American History, 5.
 Hort. 02. Elementary Horticulture, 4+2P.
 A. E. 072. Farm Mechanics, 4P.
 Span. 012. Second Year Spanish, 5.
 Chem. 02. Elementary Chemistry, 4+2P.

Eng. 033. General English Literature, 5.
 Hist. 013. American Government, 5.
 Econ. 03. Elementary Economics, 5.
 Span. 013. Second Year Spanish, 5.

OUTLINE OF COURSE IN PRE-ENGINEERING

FIRST YEAR

First Term.

Eng. 01. Composition and Literature, 5.
 Math. 01. Elementary Algebra, 5.
 Agron. 01. Elementary Agriculture 4+2P.
 M. E. 01. Free-hand Drawing, 4P.
 M. E. 011. Manual Training, 6P.

Second Term.

Eng. 02. Composition and Literature, 5.
 Math. 02. Elementary Algebra, 5.
 Agron. 02. Elementary Agriculture, 4+2P.
 M. E. 02. Mechanical Drawing, 4P.
 M. E. 012. Manual Training, 6P.

Third Term.

Eng. 03. Composition and Literature, 5.
 Math. 03. Elementary Algebra, 5.
 Geol. 03. Physiography, 4+2P.
 M. E. 03. Mechanical Drawing, 4P.
 M. E. 013. Manual Training, 6P.

SECOND YEAR

Eng. 011. Composition and Literature, 5.
 Math. 011. Plane Geometry, 5.
 Com. 051. Industrial Geography, 5.
 M. E. 031. Woodwork, 4P.
 M. E. 021. Machine Shop, 4P.

Eng. 012. Composition and Literature, 5.
 Math. 012. Plane Geometry, 5.
 Com. 052. Industrial Geography, 5.
 M. E. 032. Pattern Making, 4P.
 M. E. 022. Forge Shop, 4P.

Eng. 013. Composition and Literature, 5.
 Math. 013. Plane Geometry, 5.
 Com. 053. Commercial Law, 5.
 M. E. 033. Pattern Making, 4P.
 M. E. 023. Machine Shop, 4P.

THIRD YEAR

Eng. 021. Grammar and Literature, 5.
 Span. 01. Beginning Spanish, 5.
 Hist. 01. General History, 5.
 Phys. 01. Elementary Physics, 4+2P.
 A. E. 01. Auto Practice, 1+6P.

Eng. 022. Grammar and Literature, 5.
 Span. 02. Beginning Spanish, 5.
 Hist. 02. General History, 5.
 Phys. 02. Elementary Physics, 4+2P.
 A. E. 02. Auto and Gas Engine Practice, 1+6P.

Eng. 023. Grammar and Literature, 5.
 Span. 03. Beginning Spanish, 5.
 Hist. 03. General History, 5.
 Phys. 03. Practical Electricity, 4+2P.
 A. E. 03. Auto and Gas Engine Practice, 1+6P.

FOURTH YEAR

Eng. 031. General English Literature, 5.
 Hist. 011. American History, 5.
 Math. 021. Higher Arithmetic, 7.
 M. E. 041. Steam Engines, 3+4P.
 Span. 011. Second Year Spanish, 5.

Eng. 032. General English Literature, 5.
 Hist. 012. American History, 5.
 Math. 022. Solid Geometry, 7.
 M. E. 042. Oil and Gas Engines, 3+4P.
 Span. 012. Second Year Spanish, 5.

Eng. 033. General English Literature, 5.
 Hist. 013. American Government, 5.
 Math. 023. Advanced Algebra, 7.
 E. E. 03. Applied Electricity, 3+4P.
 Span. 013. Second Year Spanish, 5.

OUTLINE OF COURSE IN PRE-HOME ECONOMICS

FIRST YEAR

First Term.

Eng. 01. Composition and Literature, 5.
 Math. 01. Elementary Algebra, 5.
 M. E. 01. Free-hand Drawing, 4P.
 M. E. 01. Manual Training, 6P.
 Agron. 01. Elementary Agriculture, 4+2P.

Second Term.

Eng. 02. Composition and Literature, 5.
 Math. 02. Elementary Algebra, 5.
 M. E. 02. Mechanical Drawing, 4P.
 M. E. 02. Manual Training, 6P.
 Agron. 02. Elementary Agriculture, 4+2P.

SECOND YEAR

Eng. 011. Composition and Literature, 5.
 Math. 011. Plane Geometry, 5.
 H. E. 01. Domestic Art, 2+6P.
 Biol. 01. Elementary Zoology, 4+2P.

THIRD YEAR

Eng. 021. Grammar and Literature, 5.
 Hist. 01. General History, 5.
 Span. 01. Beginning Spanish, 5.
 H. E. 011. Domestic Science, 2+6P.

Eng. 031. General English Literature, 5.
 Hist. 011. American History, 5.
 Chem. 01. Elementary Chemistry, 4+2P.
 M. E. 031. Woodwork, 4P.
 Span. 011. Second Year Spanish, 5.
 Math. 021. Higher Arithmetic, 7.
 Phys. 01. Elementary Physics, 4+2P.

Third Term.

Eng. 03. Composition and Literature, 5.
 Math. 03. Elementary Algebra, 5.
 M. E. 03. Mechanical Drawing, 4P.
 M. E. 03. Manual Training, 6P.
 Geol. 03. Physiography, 4+2P.

Eng. 013. Composition and Literature, 5.
 Math. 013. Plane Geometry, 5.
 H. E. 03. Domestic Art, 2+6P.
 Biol. 03. Elementary Botany, 4+2P.

Eng. 023. Grammar and Literature, 5.
 Hist. 03. General History, 5.
 Span. 03. Beginning Spanish, 5.
 H. E. 013. Domestic Science, 2+6P.

Eng. 033. General English Literature, 5.
 Hist. 013. American Government, 5.
 Econ. 03. Elementary Economics, 5.
 M. E. 033. Pattern Making, 4P.
 Span. 013. Second Year Spanish, 5.
 Math. 023. Advanced Algebra, 7.

OUTLINE OF COURSE IN PRE-GENERAL SCIENCE

FIRST YEAR

First Term.

Eng. 01. Composition and Literature, 5.
 Math. 01. Elementary Algebra, 5.
 Agron. 01. Elementary Agriculture, 4+2P.
 M. E. 01. Free-hand Drawing, 4P.
 M. E. 011. Manual Training, 6P.

Second Term.

Eng. 02. Composition and Literature, 5.
 Math. 02. Elementary Algebra, 5.
 Agron. 02. Elementary Agriculture, 4+2P.
 M. E. 02. Mechanical Drawing, 4P.
 M. E. 012. Manual Training, 6P.

Third Term.

Eng. 03. Composition and Literature, 5.
 Math. 03. Elementary Algebra, 5.
 Geol. 03. Physiography, 4+2P.
 M. E. 03. Mechanical Drawing, 4P.
 M. E. 013. Manual Training, 6P.

SECOND YEAR

Eng. 011. Composition and Literature, 5.
 Math. 011. Plane Geometry, 5.
 Biol. 01. Elementary Zoology, 4+2P.
 Com 051. Industrial Geography, 5.

Eng. 012. Composition and Literature, 5.
 Math. 012. Plane Geometry, 5.
 Biol. 02. Elementary Physiology, 4+2P.
 Com. 052. Industrial Geography, 5.

Eng. 013. Composition and Literature, 5.
 Math. 013. Plane Geometry, 5.
 Biol. 03. Elementary Botany, 3+4P.
 Com. 053. Commercial Law, 5.

THIRD YEAR

Eng. 021. Grammar and Literature, 5.
 Hist. 01. General History, 5.
 Span. 01. Beginning Spanish, 5.
 Phys 01. Elementary Physics, 4+2P.

Eng. 022. Grammar and Literature, 5.
 Hist. 02. General History, 5.
 Span. 02. Beginning Spanish, 5.
 Phys. 02. Elementary Physics, 4+2P.

Eng. 023. Grammar and Literature, 5.
 Hist. 03. General History, 5.
 Span. 03. Beginning Spanish, 5.

FOURTH YEAR

Eng. 031. General English Literature, 5.
 Hist. 011. American History, 5.
 Span. 011. Second Year Spanish, 5.
 Chem. 01. Elementary Chemistry, 4+2P.
 Math. 021. Higher Arithmetic, 7.

Eng. 032. General English Literature, 5.
 Hist. 012. American History, 5.
 Span. 012. Second Year Spanish, 5.
 Chem. 02. Elementary Chemistry, 4+2P.
 Math. 022. Solid Geometry, 7.

Eng. 033. General English Literature, 5.
 Hist. 013. American Government, 5.
 Span. 013. Second Year Spanish, 5.
 Econ. 03. Elementary Economics, 5.
 Math. 023. Advanced Algebra, 7.

OUTLINE OF TRADES COURSE IN AUTOMOBILE MECHANICS

FIRST YEAR

First Term.

A. E. 011. Auto Shop Practice, 1+16P.
 M. E. 061. Machine Shop, 4P.
 M. E. 051. Applied Drawing, 3P.
 A. E. 061. Applied Mathematics, 2.
 Eng. 051. Trades English, 3.
 Applied Science, 2+2P.

Second Term.

A. E. 012. Auto Shop Practice, 1+16P.
 M. E. 062. Forge Shop, 4P.
 M. E. 052. Applied Drawing, 3P.
 A. E. 062. Applied Mathematics, 2.
 Eng. 052. Trades English, 3.
 Applied Science, 2+2P.

Third Term.

A. E. 013. Auto Shop Practice, 1+16P.
 M. E. 063. Machine Shop, 4P.
 M. E. 053. Applied Drawing, 3P.
 A. E. 063. Applied Mathematics, 2.
 Eng. 053. Trades English, 3.
 Applied Science, 2+2P.

SECOND YEAR

A. E. 021. Advanced Auto Practice, 8P.
 A. E. 031. Garage Management, 1+4P.
 A. E. 041. Starting and Lighting System, 3+8P.
 A. E. 051. Storage Battery Repair, 1+6P.
 Com. 021. Bookkeeping, 10P.

A. E. 022. Advanced Auto Practice, 8P.
 A. E. 032. Garage Management, 1+4P.
 A. E. 042. Starting and Lighting System, 3+8P.
 A. E. 052. Storage Battery Repair, 1+6P.
 Com. 022. Bookkeeping, 10P.

A. E. 023. Advanced Auto Practice, 8P.
 A. E. 033. Garage Management, 1+4P.
 A. E. 043. Starting and Lighting System, 3+8P.
 A. E. 053. Storage Battery Repair, 1+6P.
 Com. 053. Commercial Law, 5.

OUTLINE OF COMMERCIAL COURSES

BOOKKEEPING COURSE

First Term.

Com. 01. Bookkeeping, 15P.
 Com. 031. Commercial Arithmetic, 5.
 Eng. 01. Composition and Literature, 5.
 Com. 0131. Penmanship, 3P.
 Com. 091. Parliamentary Practice, 2P.

Second Term.

Com. 02. Bookkeeping, 15P.
 Com. 032. Commercial Arithmetic, 5.
 Eng. 02. Composition and Literature, 5.
 Com. 0132. Penmanship, 3P.
 Com. 092. Rapid Calculation, 2P.

Third Term.

Com. 03. Bookkeeping, 15P.
 Com. 033. Commercial Arithmetic, 5.
 Eng. 03. Composition and Literature, 5.
 Com. 0133. Penmanship, 3P.
 Com. 093. Correspondence, 2P.

BOOKKEEPING AND ACCOUNTING COURSE

Com. 011. Advanced Bookkeeping, 10P.
 Eng. 011. Composition and Literature, 5.
 Com. 051. Industrial Geography, 5.
 Com. 0101. Typewriting, 10P.

Com. 012. Cost Accounting, 148P.
 Eng. 012. Composition and Literature, 5.
 Com. 052. Industrial Geography, 5.
 Com. 0122. Spelling, 5.

Com. 013. Banking, 6P.
 Eng. 013. Composition and Literature, 5.
 Com. 053. Commercial Law, 5
 Com. 023. Farm Accounting, 144P.
 Com. 0143. Salesmanship, 4.

SHORTHAND COURSE

Com. 061. Stenography, 10.
 Com. 0101. Typewriting, 10P.
 Eng. 011. Composition and Literature, 5.
 Com. 071. Business English, 5.

Com. 062. Stenography, 10.
 Com. 0102. Typewriting, 10P.
 Eng. 012. Composition and Literature, 5.
 Com. 0122. Spelling, 5.

Com. 063. Stenography, 10.
 Com. 0103. Typewriting, 10P.
 Eng. 013. Composition and Literature, 5.
 Com. 073. Office Training, 246P.

SECRETARIAL COURSE

Com. 0161. Advanced Stenography, 5, or
 Com. 0261. Spanish Stenography, 5.
 Com. 0111. Typewriting, 5P.
 Com. 0221. Bookkeeping, 10P.
 Com. 081. Office Practice, 10P.

Com. 0162. Advanced Stenography, 5, or
 Com. 0262. Spanish Stenography, 5.
 Com. 0112. Typewriting, 5P.
 Com. 0222. Bookkeeping, 10P.
 Com. 082. Office Practice, 10P.

Com. 0163. Advanced Stenography, 5, or
 Com. 0263. Spanish Stenography, 5.
 Com. 0113. Typewriting, 5P.
 Com. 0223. Bookkeeping, 10P.
 Com. 083. Office Practice, 10P.

BUSINESS TRAINING COURSE

Bookkeeping Course and Shorthand Course constitute first and second years

THIRD YEAR

First Term.

Com. 011. Advanced Bookkeeping, 10P.
 Com. 0161. Advanced Stenography, 5, or
 Com. 0261. Spanish Stenography, 5.
 Com. 021. Business Organization, 5.
 Com. 051. Industrial Geography, 5.

Second Term.

Com. 012. Cost Accounting, 1+8P.
 Com. 0162. Advanced Stenography, 5, or
 Com. 0262. Spanish Stenography, 5.
 Com. 022. Accountancy, 2+6P.
 Com. 052. Industrial Geography, 5.

Third Term.

Com. 013. Banking, 6P.
 Com. 083. Office Practice, 10P, or
 Com. 0263. Spanish Stenography, 5.
 Com. 023. Farm Accounting, 1+4P.
 Com. 053. Commercial Law, 5
 Com. 0143. Salesmanship, 4.

BUSINESS TRAINING COURSE FOR HIGH SCHOOL GRADUATES

FIRST YEAR

Com. 0221. Bookkeeping, 10P.
 Com. 061. Stenography, 10
 Com. 0101. Typewriting, 10P.
 Com. 0131. Penmanship, 3P.

Com. 0222. Bookkeeping, 10P.
 Com. 062. Stenography, 10.
 Com. 0102. Typewriting, 10P.
 Com. 0122. Spelling, 5.

Com. 0223. Bookkeeping, 10P.
 Com. 063. Stenography, 10.
 Com. 0103. Typewriting, 10P.
 Com. 093. Correspondence, 2P.

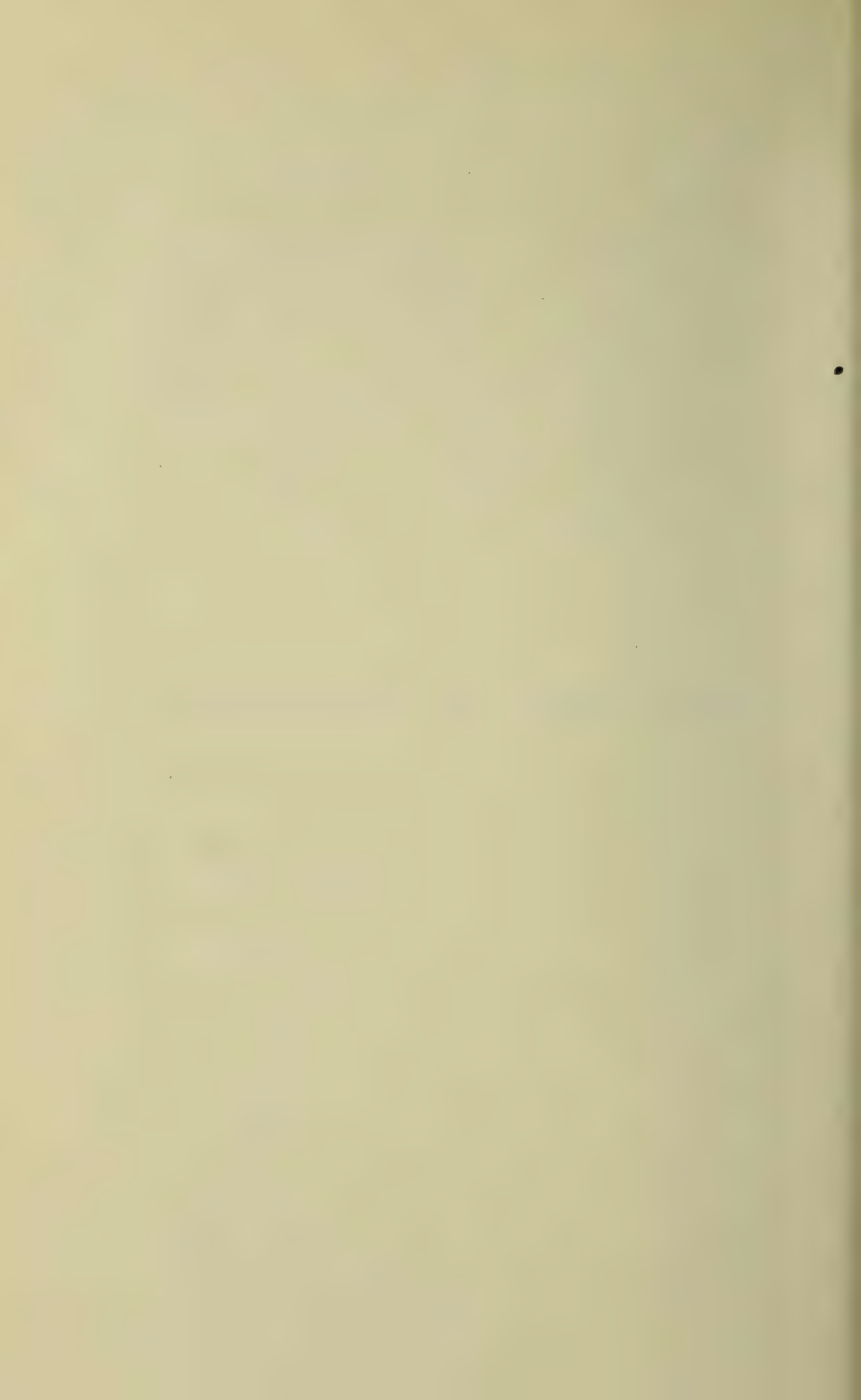
SECOND YEAR

Com. 011. Advanced Bookkeeping, 10P.
 Com. 0161. Advanced Stenography, 5, or
 Com. 0261. Spanish Stenography, 5.
 Com. 021. Business Organization, 5.
 Com. 051. Industrial Geography, 5.

Com. 012. Cost Accounting, 1+8P.
 Com. 0162. Advanced Stenography, 5, or
 Com. 0262. Spanish Stenography, 5.
 Com. 022. Accuracy, 2+6P.
 Com. 052. Industrial Geography, 5.

Com. 013. Banking, 6P.
 Com. 073. Office Training, 2+6P.
 Com. 0263. Spanish Stenography, 5, or
 Com. 083. Office Practice, 10P.
 Com. 0143. Salesmanship, 4.
 Com. 053. Commercial Law, 5

The School of Agriculture



The School of Agriculture

FACULTY.

AUSTIN DANIEL CRILE, President of the College.

LUTHER FOSTER, M. S., Professor of Animal Husbandry.

FABIAN GARCIA, M. S., Professor of Horticulture.

RUPERT LYONEL STEWART, M. S., Professor of Agronomy .

GEORGE ROBINSON QUESENBERRY, B. S., Professor of Farm Management.

JOSEPH WHEELER RIGNEY, B. S., Assistant Professor of Horticulture.

JAMES RILEY MEEKS, B. S., Assistant Professor in Charge of Dairying.

ARRA BURTON FITE, B. S., Assistant Professor of Horticulture.

ROYAL BURLEIGH THOMPSON, B. S., Assistant Professor in Charge of Poultry Husbandry.

CHARLES AUGUSTUS THOMPSON, B. S., Assistant Professor of Agronomy.

CLEAVE WELIFORD HUMBLE, B. S., Instructor in Animal Husbandry.

JAME MORTON FRANKLIN, B. S., Instructor in Horticulture.

GATES STIRLING VICKERS, B. S., Instructor in Poultry Husbandry.

The School of Agriculture

The School of Agriculture embraces the following departments of instruction :

- I. Department of Agronomy, including Soil Physics.
- II. Department of Animal Husbandry.
- III. Department of Dairying.
- IV. Department of Horticulture, including Landscape Gardening and Floriculture.
- V. Department of Poultry Husbandry.

The courses of study offered under these several departments are designed to combine, in the proper proportion, that amount of theoretical study with laboratory and field training which will produce a well rounded, practical, resourceful man.

To this end the courses are strong in botany and chemistry, which form important aids to applied agriculture, and a certain number of other subjects of general educational value are included. To all this is added a large amount of practical work under competent instruction and with a modern equipment. The instruction is given by text-books, lectures, laboratory practice, and field observation. These courses fit the young man for the various agricultural pursuits: *farming, stock raising, dairying, fruit growing, market gardening, and the nursery business. They also prepare him for professional positions in agricultural colleges, for service in the United States Department of Agriculture, and for farm management and supervision.* The demand for trained men in these latter positions has been so great that in recent years almost all agricultural graduates have been called into college or experiment station work.

A new and important field of opportunity for young men trained in agriculture has been opened through the passage by Congress of the Smith-Lever bill for agricultural extension

work and its acceptance by the various states of the Union. Within a short time millions of dollars will be spent annually in carrying scientific agricultural knowledge to the farmers, in organizing the farmers and farmers' wives for better conditions of rural life, and improving marketing conditions. The State of New Mexico has now in its employ a large number of agricultural experts, at salaries ranging from \$1,500 to \$2,500 per year, and all traveling expenses paid. This opportunity is not alone for men, but also for women.

In the field of teaching both for men and women there is a constantly increasing demand for those who have had training in agricultural and farm problems. There is also a constantly increasing demand for young women teachers who have been trained in home economy.

DEPARTMENT OF AGRONOMY.

PROFESSOR STEWART.

PROFESSOR QUESENBERRY

ASSISTANT PROFESSOR THOMPSON

MR. FRANKLIN

Agronomy is the science of the field and its crops. The object of the work is to acquaint the student with soils, crops, crop production, machinery of crop production, improvement of soils, the preservation of fertility and the application of economic business methods.

Secondary Courses.

The work in the secondary courses in agronomy is elementary and general in character, and is designed to present the basic principles of agriculture in general, with special reference to soils and crops.

Agron. 01, 02. *Elementary Agriculture.* A course introductory to general agriculture. A wide range of subjects will be taken up, in order to acquaint the student with the various branches of agriculture.

Required of first year students in pre-college courses, first and second term, 4 hours plus 2 hours practice.

Agron. 011. *Principles of Agronomy.* An elementary course in soils and crops. Some of the most important crops will be studied, the best varieties for various sections, their comparative values and best methods of culture.

Required of fourth year pre-agricultural students, first term, 4 hours plus 2 hours practice.

College Courses.

Agron. 3a. *Farm Machinery.* This course is designed to familiarize students with the usual farm implements and machinery, particular stress being given to the types best suited to New Mexico conditions. This course will include studies of the construction and use of different forms of plows, haying machinery, wagons, grain drills, etc., their adaptation and the conditions under which they can be used economically. The first six weeks is devoted to the construction, operation and adaptation of the more common type of farm machinery, and the last

six weeks is devoted to the up-keep and repair of same. (See A. E. 3).

Required of freshmen in agriculture, first half of third term, 3 hours plus 2 hours practice. Pre-requisite, A. E. 2.

Agron. 12. *Field Crops*. The history, distribution, classification, cultivation, production and marketing of cereal crops. Laboratory work in judging grains, varietal characteristics, seed selection and market grading of grain.

Required of sophomores in agriculture, second term, 4 hours plus 2 hours practice. Prerequisite, Biol. 1 and 3.

Agron. 13. *Forage Crops*. A laboratory and class room study of legumes, grasses and other forage, seed and fiber crops, their occurrence, culture, adaptability to different regions, feeding values, and uses.

Required of sophomores in agriculture, third term, 4 hours plus 2 hours practice. Prerequisite, Biol. 1 and 3.

Agron. 31. *Soil Physics*. The origin, formation and classification of soils, the use of soil, soil texture, the physical relation of soil to moisture, temperature and air and their effect on crop production.

Required of juniors in agriculture, first term, 3 hours plus 4 hours practice. Prerequisite, Chem. 1, 2 and 3.

Agron. 32. *Soil Fertility*. A continuation of Agron. 31. It includes a study of the relation of fertilizers and barnyard and green manures in maintaining and improving the fertility of the soil, methods of improving and reclaiming unprofitable areas.

Required of juniors in agriculture, second term, 3 hours plus 4 hours practice. Prerequisite, Agron. 31.

Agron. 33. *Dry Farming*. The methods best adapted to the growing of profitable crops on arid lands, moisture and conservation, special tillage methods and machinery, soil and climatic conditions in dry farming regions, with special reference to New Mexico.

Required of juniors in agriculture, third term, 3 hours practice. Prerequisite Agron. 12, 13, 31 and 32.

Agron. 41, 42. *Farm Management*. This course deals with the organization and management of the farm as a business enterprise, the relation of capital, size and diversity of business, farm equipment, farm outlay, labor, cropping systems, production and marketing, to labor income.

Required of seniors in agriculture, first and second terms, 4 hours plus 2 hours practice. Prerequisite, Agron. 12, 13, 31 and 32, and A. H. 1 and 3.

Agron. 43. *Farm Cost Accounts*. A study of the factors involved in keeping farm cost accounts. Simple and practical methods of keeping farm records and accounts will be studied.

Required of seniors in agriculture, third term, 1 hour plus 4 hours practice.

Agron. 52. *Experimental Agronomy*. Special work for advanced students conducted in the field and laboratory, the aim being to familiarize them with the theories of investigation as they apply to farm and station work.

Required of seniors specializing in agronomy, elective for other students in agriculture prepared to take the work, second term, 4 hours practice.

Agron. 61, 62, 63. *Advanced Soils*. The work of this course is a continuation of Agron. 32, and consists of special experimentation and lecture work on such subject as fertilizers, inoculation, seepage and alkali studies. This course may be a major or minor subject for graduate work if desired.

Elective for seniors in agriculture, first, second, or third term, 3 hours.

Agron. 71, 72, 73. *Advanced Crops*. Students desiring advanced work in crops may arrange for special laboratory and field work in plant breeding, tillage methods, and rotation of crops.

Elective for seniors in agriculture, first, second, or third term, 3 hours.

The Teaching of Agriculture. (See Department of Vocational Education, Courses 12 and 13), a course for the training of teachers of agriculture.

EQUIPMENT.

The department of agronomy occupies space in the Agricultural Building for laboratories, lecture rooms, and offices. It also has a soils laboratory in Science Hall, its proportionate part in the large experiment station corrals, and a large adobe building for the storing of field crops, feeds, and light machinery. For the studies in soils, both general and technical, the department is well equipped with modern appliances. For the studies in crops the laboratories contain all necessary permanent equipment. Each year new supplies of cereals, grasses, and forage crops are grown on the college farm for the use of the classes, and fresh supplies of foreign seeds are obtained when needed. The classes in field machinery have access to almost every type of field machinery used in this region. Extensive experiments carried on by the department with crops and soils are continually used in the way of demonstration,—the immediate vicinity affording ample facilities for studying soil formation, transportation and farm management.

DEPARTMENT OF ANIMAL HUSBANDRY.

PROFESSOR FOSTER

MR. HUMBLE

In view of the fact that live stock is the leading industry of the State and that its further development has wonderful possibilities, a strong course in animal husbandry is given with special reference to state conditions. The subjects are pursued from a practical as well as a scientific standpoint, having in view the thorough equipment of young men for successful work in breeding, care, and management of large herds.

Secondary Course.

A. H. 02. *Elementary Animal Husbandry.* This course is designed to introduce students to the study of animal husbandry and give them a brief knowledge of the subject as a whole, bringing them into closer touch with the actual affairs of the farm and preparing them for the more advanced subjects of the college course. A general study is made of all the prominent breeds of live stock, judging them by the score card method, the principles of feeding and the practical application of these principles to the different classes of stock, the general principles of breeding, and the care and management of animals used for the various purposes on the farm.

Required of second year pre-agricultural students, second term, 4 hours plus 2 hours practice.

College Courses.

A. H. 1. *Types of Live Stock.* This is a practical course in the study of animal type, form, and quality, and their relation to the utility of animals, suitability for breeding and market demands. The score card is used until the student gets thoroughly familiar with the desired conformation, when classes are made up for comparative judging. The first term is devoted to a study of beef cattle and dairy cattle.

Required of freshmen in agriculture, first term, 2 hours plus 4 hours practice.

A. H. 3. *Types of Live Stock.* This course, which is a continuation of A. H. 1., is given over to the study of horses, hogs, and sheep.

Required of freshmen in agriculture, third term, 2 hours plus 4 hours practice.

A. H. 11. *Stock Feeding.* A study is made of the digestive system, principles of nutrition, and the composition of different feedstuffs, with a comparison of their relative values in feeding different kinds of stock, obtained from a study of the experiments conducted at the different stations. Special emphasis is put upon the compounding of rations from feeds available to New Mexico farmers and the profitable feeding of stock under New Mexico conditions.

Required of juniors in agriculture, first term, 5 hours.

A. H. 12. *Veterinary Science* This course consists of a study of animal anatomy and pathology. The work in anatomy familiarizes the student with the structure of farm animals, so that he can more intelligently select, feed, and care for his stock. The work in pathology includes the causes, prevention, diagnosis and treatment of the more common diseases met with among farm animals. It gives the student a general knowledge of some of the most dangerous and common contagious and infectious diseases, with methods of eradicating them from the country. Special attention is given to horseshoeing with relation to the conformation and structure of the horse's foot, and to unsoundness and blemishes of horses.

Required of juniors in agriculture, second term, 5 hours.

A. H. 21. *Live Stock Management.* This course is intended largely to prepare the students in the practical application of the many things that are necessary in the successful management of live stock. It consists of demonstrations and actual work in handling the various kinds of live stock, such as dehorning cattle, dipping stock, castrating animals, restraining animals for various operations and other purposes, fitting animals for sale and show, trimming feet, shearing sheep, fitting harnesses and hitching horses, training and breaking colts, and the use of various convenient appliances needful in handling stock.

The student will thus be better prepared to take charge of stock farms and direct and perform the actual operations necessary for conducting the business.

Required of juniors in animal husbandry, elective for other students in agriculture, first term, 3 hours plus 4 hours practice.

A. H. 22. *Herd Books*. The time in this is given over to a study of the pedigrees and their importance in selecting and breeding stock. It affords a training in the intelligent use of the various breed books, a study of the prominent families and tribes, and the influence of using their blood for breeding.

Required of juniors specializing in animal husbandry, elective for other students in agriculture, second term, 1 hour plus 4 hours practice.

A. H. 23. *Stock Judging*. Students are drilled in the comparison of animals, and their utility and adaptability to different conditions. The practical work of judging is supplemented by text books and lecture work on the history, development, characteristics, and suitability of horses, cattle, sheep and swine for various purposes. The student is familiarized with the excellence and deficiencies of the different breeds, specially those best adapted to New Mexico conditions.

Required of juniors in animal husbandry, elective for other students in agriculture, third term, 3 hours plus 4 hours practice.

A. H. 31. *Stock Judging*. A continuation of the preceding course.

Required of seniors specializing in animal husbandry, elective for other students in agriculture, first term, 3 hours plus 4 hours practice.

A. H. 33. *Animal Breeding*. This course covers the laws governing the breeding of animals, and includes study of breed formation, principles of heredity, laws of correlation, variation, fecundity, atavism, in-and-in breeding, parentage, form types, and pedigrees. Attention is given to the selection of such animals as would aid in the improvement of New Mexico stock.

Required of seniors specializing in animal husbandry, elective for other students in agriculture, third term, 5 hours.

A. H. 43. *Types and Market Classes.* It is the aim of this course to familiarize the student with the types of farm animals, market demands, and market clues of live stock, such knowledge being fundamental in all live stock work and study, and valuable not only to breeders and feeders, but to all people who buy and use animals. By this practical study the student is given a much clearer conception of values and a much better appreciation of live stock than would otherwise be possible.

Required of seniors in animal husbandry, elective for other students in agriculture, third term, 3 hours plus 4 hours practice.

EQUIPMENT.

Live Stock. The equipment in live stock is very good. Numerous breeds of cattle are represented in the college herd by both males and females of the standard dairy and beef breeds: Jerseys, Guernseys, Holsteins, Herefords, Shorthorns and Aberdeen-Angus. Very good types of Rambouillet, Shropshire, and Horned Dorset sheep are kept for instruction as well as some very fine specimens of Tanworth, Poland China and Duroc-Jersey swine. A fine team of registered Percheron mares have also recently been added to the equipment. All of the pure bred stock have either been selected from show stock or are descendants from prize-winning animals at the leading live stock shows.

DEPARTMENT OF DAIRYING.**ASSISTANT PROFESSOR MEEKS**

The dairy industry is recognized as one of the leading and profitable agricultural pursuits, especially in many sections of the Southwest. In view of this fact, the dairy department has been materially enlarged and improved. A modern dairy barn is being constructed which, with the calf barn and milk room, will take care of a herd of thirty cows, including young stock and bulls, in a very satisfactory manner. The college dairy herd is composed of Jerseys, Guernseys, and Holsteins. Some of the individual animals represent the very best blood lines within their respective breeds. The dairy laboratory is equipped with modern machinery and is adapted to instruct students in the proper management of the average-sized creamery.

Dairying is a science treating with the many phases of the dairy industry. It is the object of the dairy department to provide the students enrolled in its various classes with a practical knowledge of the dairy business. The following outlined and described courses emphasize the importance of the dairy industry.

Secondary Course.

Dairy 03a. *Elementary Dairying.* This course is designed to comply with the needs of the average farmer. A general study is made of the different breeds of dairy cattle and their relative importance. Milk production and the proper care of milk and milk products on the farm are especially emphasized. The student is taught the value of record keeping and the proper application of the Babcock test. Text used, "Milk and Milk Products," by Wing.

Required of third year pre-agricultural students, first half of third term, 3 hours plus 2 hours practice.

College Courses.

Dairy 3a. *Home Dairying.* This course is designed to comply with the needs of young women preparing to teach agriculture and to properly equip themselves with a general knowledge of dairying. Dairy cattle are studied from the standpoint of

milk production under sanitary conditions and the proper care of milk and milk products in the home are emphasized as well as practical work in butter making, milk testing and record keeping. Text used, "Milk and Milk Products in the Home," by John Michles.

Required of freshmen in home economics, first half of third term, 3 hours plus 2 hours practice.

Dairy 11. *Dairy Judging*. In this course a special study of each of the dairy breeds and their individual scores are made by the score card method. The student is taught the value of systematic and accurate methods in making decisions and placings. No text is used, but the laboratory practice is supplemented by using such references as "Types and Breeds of Farm Animals," by C. S. Plumb and "Principles and Practices of Stock Judging," by C. W. Gay.

Elective for juniors in agriculture, first term, 4 hours practice.

Dairy 13. *Farm Dairying*. This course is outlined to enlighten the student in the general phases of farm dairying. The secretion and composition of milk and the relation of sanitation to the proper care of dairy products are especially emphasized. The Babcock test and its application, the operation of farm separators and farm butter making are also included in the course. Text used, "Manual of Milk Products," by W. A. Stocking.

Required of sophomores in agriculture, third term, 3 hours plus 4 hours practice.

Dairy 22. *Dairy Manufactures*. This is an advanced course in butter making, the manufacture of cheese and ice cream and other dairy products. The course is outlined to properly equip students with a practical knowledge of the various phases of the creamery business. Text used, "Principles and Practices of Butter Making," by McKay and Larsen, supplemented by library assignments.

Required of juniors specializing in dairying, elective for other students in agriculture prepared to take the work, second term, 3 hours plus 6 hours practice. Prerequisite, Dairy 11 and 13.

Dairy 32. *Milk Production*. This course treats of the proper management of the dairy herd and economical methods of feeding for milk production. Due attention is given to the approved methods of improving the dairy herd, including methods of breeding, feeding and record keeping. Texts used, "Productive Dairying," by R. M. Washburn, and "Dairy Cattle and Milk Production," by C. H. Eckles.

Elective for juniors in agriculture, second term, 3 hours plus 3 hours practice. Prerequisite, Dairy 11 and 13.

Dairy 41. *Breeds of Dairy Cattle*. This course deals with the proper methods of record keeping and pedigree writing. Special attention is given to the leading bloodlines in each of the dairy breeds. The methods of registering and transferring animals and the relation of certain bloodlines to breed improvement are especially emphasized. No text used, library references supplementing lectures.

Required of seniors specializing in dairying, elective for other students in agriculture prepared to take the work, first term, 4 hours practice. Prerequisite, Dairy. 11, 13 and 32.

Dairy 42. *Business of Dairying*. This course is designed to prepare the student for Extension or teaching work along dairy lines. Practical problems relative to the management of large dairy herds, milk production under strict sanitary laws, development of dairy calves, the marketing dairy products and the application of business methods are a few of the most important considerations of the course. Dairy farm buildings are studied from the standpoint of sanitation and economy. Intensive methods are considered. Soiling crops and crop rotations are emphasized. No text required. Lectures supplemented by term assignments, library references and inspection trips.

Required of seniors specializing in dairying, elective for other students in agriculture prepared to take the work, second term, 3 hours plus 3 hours practice. Prerequisite Dairy. 11, 13, 22 and 41.

Dairy 43. *Dairy Judging*. This course is outlined to give the student a very practical knowledge of dairy cattle. Dairy cattle of all ages are studied both from the show ring standpoint

and from the practical dairyman's point of view. Nearby herds are visited and inspection trips are made to give the student practice in making decisions and placings. Judging practice is the motto of this course. No text used.

Required of seniors specializing in dairying, elective for other students in agriculture prepared to take the work, third term, 4 hours practice. Prerequisite, Dairy. 11 and 13.

DEPARTMENT OF HORTICULTURE.

PROFESSOR GARCIA

ASSISTANT PROFESSOR RIGNEY

ASSISTANT PROFESSOR FITE

MR. FRANKLIN

The endeavor in teaching this subject is to train young men for successful work in horticultural pursuits, such as fruit growing, nursery business, market gardening, and landscape gardening, and to fill positions as fruit managers, experiment station workers, and teachers of horticulture. This instruction is given by text books and lectures, supplemented by outside reading, laboratory practice, and field observation.

Secondary Courses.

Hort. 02. *Elementary Horticulture*. This is a general elementary study of the fundamentals of vegetable growing, greenhouse work and fruit growing. The course will consist of recitations and practice work. Mr. Franklin.

Required of fourth year pre-agricultural students, second term, 3 hours plus 2 hours practice.

College Courses.

Hort. 2. *Home Gardening*. This work consists of lectures and laboratory practice in vegetable growing, fruit growing, floriculture and landscape gardening. The student is expected to keep notes on all work. Practice is given in greenhouse and garden. Mr. Franklin.

Required of freshmen in home economics, second term, 2 hours plus 2 hours practice.

Hort. 12. *Plant Propagation*. An introductory study of the general methods of propagation, such as seeding, cutting and layering; taking up more in detail the propagation of fruits by budding and grafting. Mr. Franklin.

Required of freshmen in agriculture, second term, 2 hours plus 4 hours practice.

Hort. 11. *Canning*. The student is given lectures, supplemented by practical work in canning, study of machinery, methods and cost. Recipes for canning all the common fruits and vegetables are given. Assistant Professor Fite.

Required of sophomores in agriculture, first half of first term, 8 hours practice.

Hort. 21. *Floriculture and Landscape Gardening*. A study of the basic principles of landscape gardening, the arrangement and planting of farm homes for beauty, comfort, health and convenience; the drawing of plans, arrangement of lawns, houses and other buildings; the setting of ornamental trees, shrubs and flowers adapted to New Mexico. Assistant Professor Rigney.

Required of sophomores in agriculture, first term, 2 hours plus 2 hours practice.

Hort. 22. *Vegetable Gardening*. A study of the different vegetable crops; tillage, care and planting of the garden; the use of cold frames, hot-beds and greenhouses; the adaptation of varieties to local conditions and soils. Professor Garcia.

Required of sophomores in agriculture, second term, 4 hours plus 4 hours practice.

Hort. 31. *Forestry*. A study of the more common forest trees, windbreaks, and the general influences of the forest on the climate and the water courses. Attention is given to the forest conditions in New Mexico, and also to the species of trees adapted to street and park planting in this climate. Assistant Professor Rigney.

Required of juniors in horticulture, elective for other students of agriculture, first term, 3 hours plus 2 hours practice.

Hort. 32. *Fruit Growing*. A short lecture course on orchard practices, including planning, planting, tillage, spraying, classifying, marketing, etc. The object is to give a good fundamental knowledge of orcharding to general agricultural students. Professor Garcia.

Required of all juniors in agriculture, second term, 4 hours plus 2 hours practice.

Hort. 33. *Pruning*. Special study of fruit bud and tree growth, with instruction and practice in the art of pruning. Professor Garcia.

Required of juniors in agriculture, third term, 2 hours plus 2 hours practice.

Hort. 41. *Plant Breeding*. Selection, crossing, variation, mutation and the influence of environment and food are investigated. Mr. Franklin.

Required of all seniors in agriculture, first term, 5 hours.

Hort. 51. *Advanced Horticulture*. A study of the varieties of fruits, with practical work in classifying, judging, grading and storing, and of machinery used in harvesting and marketing of the fruit crop. Assistant Professor Rigney.

Required of seniors in horticulture, elective for other students in agriculture, first term, 3 hours.

Hort. 52. *Advanced Horticulture*. A continuation of Hort. 51. This course involves the preparation and discussion of papers on the evolution of the different fruits and vegetables. Assistant Professor Rigney.

Required of seniors in horticulture, elective for other students in agriculture, second term, 3 hours.

Hort. 53. *Nuciculture, Viticulture and Citrus Fruits*. Advanced course in the study of grapes, nut bearing trees, and tropical fruits. Assistant Professor Rigney.

Required of seniors in horticulture, elective for other students in agriculture, third term, 3 hours.

Thesis. Original research work in horticulture under the supervision of the head of the department.

Required of seniors in horticulture, third term, 5 hours.

GRADUATE WORK.

Advanced work in horticulture is offered to students who are qualified and wish to specialize along this line. Special opportunities are offered for the study of problems bearing upon pomology, olericulture, and forestry. Some of the lines along which the student may work are:

Pomology. The orchards and vineyards of the department, containing a large number of varieties, furnish abundant material to the student who wishes to make a comparative study of varieties as well as of their adaptability to this climate.

Olericulture. Most of the time in this course will be devoted to problems relating to economic production of vegetables and marketing through various organizations. In addition to this, special study will be made of variations and adaptations to various climates and conditions.

Forestry. A study of forest economics, history of forestry, the relation of the forests directly and indirectly to the public welfare, forest administration, study of the factors influencing prices of lumber and forest products.

Landscape Gardening. Most of the time in this course will be devoted to the laying out of large public grounds and parks. Special attention will be given to the adaptability of ornamental plants to this climate.

EQUIPMENT.

This department has an excellent horticultural library, a number of different styles of orchard and garden cultivators, a good supply of the different kinds of pruning knives, shears, and saws, as well as garden trowels and dibbers, six kinds of sprayers, and a number of different styles of fruit and seed graders.

The department also has a twenty-three acre farm, where all the investigational work in horticulture is conducted. The experimental orchards and vineyards contain many varieties of fruit trees and vines. Apples, peaches, pears, plums, cherries, apricots, small fruits, and grapes afford an excellent opportunity for the study of varieties and of cultural methods. Vegetable gardens, cold-frames, and greenhouses are available for practice and for experimental work. The arboretum, lawns, and flower gardens give splendid facilities for observation and study.

During the past year the cannery equipment has been materially increased. This equipment consists of three different kinds of pressure boilers, the largest of which has a capacity of from 1,500 to 3,500 cans a day. The rest of the equipment is excellent also, consisting of an adequate supply of knives, pans, peelers, capping and tipping irons, etc. Apples, peaches, grapes, pears, etc., with a variety of vegetables, are obtained from the farm for practice.

DEPARTMENT OF POULTRY HUSBANDRY.

ASSISTANT PROFESSOR THOMPSON

MR. VICKERS

The poultry industry in New Mexico is one of considerable importance, especially for the general farmer. The possibilities for development along general lines is almost unlimited, and for this reason all agricultural students are required to take a general course in poultry husbandry, all home economics students are required to take a course in poultry husbandry designed to cover the needs and care of the home flock, and all pre-agricultural students are given an elementary course in poultry husbandry. The courses are arranged to teach by doing, as far as possible, the practical operations being given equal consideration with the theory.

Secondary Courses.

P. H. 03b. *Elementary Poultry Husbandry*. Designed to give the pre-agricultural student an intimate knowledge of the practical side of farm poultry keeping. Teaching practical housing, feeding, breeding, marketing, incubation and brooding.

Required of third year pre-agricultural students, second half of third term, 3 hours plus 2 hours practice.

College Courses.

P. H. 2. *General Poultry*. This is a practical course devoted to the study of poultry keeping on the farm, with especial attention being given to New Mexico conditions. The course covers origin and development of the breeds, characteristics of the breeds, housing, feeding, breeding, marketing, incubation, and brooding.

Required of freshmen in agriculture, second term, 2 hours plus 4 hours practice.

P. H. 3b. *Poultry Husbandry*. This course covers the same ground as P. H. 03b, only in a less elementary way.

Required of freshmen in home economics, second half of third term, 3 hours plus 2 hours practice.

P. H. 11, 12, 13. *Advanced Poultry*. This course is designed to give the student who desires to carry out poultry husbandry as a vocation or profession the necessary training for

that purpose. All subjects are taken up in a fashion of original research. The recitation periods are devoted to theory and discussion, while the application of the theory and other practical work is carried on during the practice periods.

Elective for seniors in agriculture, first, second and third term,
5 hours plus 10 hours practice.

EQUIPMENT.

The poultry department is well equipped to teach all phases of the poultry industry. The yards contain fourteen portable colony houses and three portable brooder houses of different types, one laying house of 400-hen capacity, and a modern incubator house containing a number of types and makes of incubators. The college flock consists of Single Comb White Leghorns, White Wyandottes, White Plymouth Rocks, Barred Plymouth Rocks, Single Comb Rhode Island Reds, and Light Brahmas. The College also has a flock of exceptionally good Bronze Turkeys.

The School of Engineering

The School of Engineering

FACULTY.

AUSTIN DANIEL CRILE, President of the College.

ARTHUR FRANKLIN BARNES, B. S. in M. E., Dean of the School of Engineering and Professor of Mechanical Engineering.

MARION SHIRLEY BOWEN, Professor of Practical Mechanics.

RALPH WILLIS GODDARD, B. S. in E. E., Professor of Electrical Engineering.

FRANK ARTEMUS HITCHCOCK, M. S. in C. E., Professor of Civil Engineering.

JOHN WILLIAM JOURDAN, B. S. in C. E., Assistant Professor of Irrigation Engineering.

ARTHUR HENRY HOFFMAN, B. S. in E. E. and A. E., Assistant Professor of Agricultural Engineering.

The following are the departments of instruction in the School of Engineering:

- I. Department of Agricultural Engineering
- II. Department of Civil Engineering.
- III. Department of Electrical Engineering.
- IV. Department of Irrigation Engineering.
- V. Department of Mechanical Engineering.

Engineering has been defined as the utilization of nature in the service and for the benefit of mankind, as illustrated in the construction and use of machinery, the erection and maintenance of structures, and the discovery, decomposition, and recomposition of the component parts of material things. The field thus described is so vast that it is impractical in this age of specialization for one to cover the whole, and for the needs of the southwest, four-year courses are given by the several departments in agricultural, civil, electrical, irrigation, and mechanical engineering, leading to the degree of Bachelor of Science in the course taken.

So well are we doing this work that we are recognized as an approved technical school both by the United States Civil Service Commission and the Engineer Corps of the United States Army. Our graduates are holding important positions in the engineering world and show the efficiency of our work.

The courses of study given by the various departments aim first to give a thorough grounding in the mathematics and physical sciences related to engineering with the application of these subjects to the fundamental and special branches of engineering, and second, to allow a considerable amount of specialization and practice along the several lines of study offered by the school.

Much time is necessarily devoted to higher mathematics and to technical subjects; yet certain fundamental studies, necessary to a broad and liberal education, such as English, physics, chemistry, foreign languages, and economics are provided for.

Instruction is given by lectures, recitations, and class room discussions, together with practice in laboratories, shops and field work. The whole is so combined as to constitute a symmetrical course of study.

The plan of study in the engineering courses is as follows: An identical course is given for the first year and one-half, thus giving the student a solid foundation in the basic subjects of mathematics, physics, drawing and shop work. At the same time this gives opportunity for the young man to become familiar with the scope and character of work in the various branches. In the second term, sophomore year, specialization begins, but until the end of the first term, junior year, the majority of the courses are those fundamental to all engineering rather than to any particular branch. In the last year and a half extensive specialization is the practice, at the end of which time the student is ready to enter his chosen profession.

VOCATIONAL DIVISION OF THE SCHOOL OF ENGINEERING.

In addition to the regular four-year college courses, the School of Engineering has recently been authorized by the Smith-

Hughes Act to give trades courses for the making of mechanics and such other tradesmen as are needed in the State of New Mexico. These courses are below college grade and are entirely distinct from the college technical courses. They lead to a certificate as a qualified journeyman rather than to a professional degree as an engineer. A two years' course is now being given, fitting young men to become expert automobile mechanics. As soon as the exact needs of the State can be ascertained, courses in other trades will be added. Students are registered for these courses subject to the following regulations:

Standards Set by Law. The course must extend over nine months each year and consist of not less than thirty hours per week. Further, half of the time of such instruction must be given to practice work. The course of study for the training of automobile mechanics, as now given, has been approved by the Federal Government and we wish to make it clear that this work cannot be taken in part, but that the entire curriculum must be taken in order to receive a certificate or recognition under this act.

Requirements for Admission. Applicants for admission to the courses must be at least fourteen years of age and graduates of the eighth grade, except in cases where general maturity and ability to profit by instruction may take the place of the requirement. Further, no one will be tolerated in the class who is not thoroughly in earnest.

Size of Class. In case the number of applications is too large for every student to have the personal attention of his teacher and the use of equipment he requires, the College reserves the right to admit those whom it believes best fitted for the work and the others will be placed on a waiting list.

Certificates. Certificates will be issued upon the completion of the course showing that the student has completed the work and is recommended as a first class mechanic.

Tuition and Expenses. Students registering for these courses pay only such fees as are required of all students attending this institution, except that they are expected to buy a few tools.

COURSE IN AUTOMOBILE MECHANICS.

In considering what training should be given under the Smith-Hughes Act, it is very clear to us that there is great opportunity at the present time in this State for automobile mechanics. We have in a small way been carrying on this work and have seen enough of it to know that graduation from a course as shown should assure permanent employment at an excellent wage. The use of automobile and gas engines in New Mexico is increasing fast and there is hardly a town that has not a garage in it, and it is true that there is hardly a garage that turns out first class work, the reason being that the best mechanics do not gravitate to this region. For this reason, boys will have ample opportunity for employment with good wages without leaving their own state.

Course of Study. It is the aim of the course to lay a broad foundation for those who intend to become skilled and intelligent mechanics. The plan of instruction requires the student to spend half his time in the trade work. He is learning to acquire skill and experience in this way. The other half of his time is devoted to related subjects which are as essential as the practice work itself, since, only with a foundation of this kind can a mechanic solve and meet the changes in manufactures and the changes of the trade that come about from year to year. The man who knows repair work from practical learning only cannot meet the changes in design and development in automobile construction that are continually taking place. He must have a broad foundation in order to think out new conditions. This further instruction involves some subjects of general education, including military drill. These subjects are placed in the course for the definite purpose of making better citizens, able to take their place in the life of this country in either peace or war.

In this course the students acquire standards of accurate workmanship, habits of reasoning and seeking for the best methods that follow them long after they leave College. An intelligent beginning of their mechanical career makes each year's practical experience thereafter count for success.

Before certificates of graduation are granted in automobile mechanics, the student must put in at least three months of practice work in some first class garage. Co-operative arrangements for this work will be provided for by the College.

EQUIPMENT AND FACILITIES FOR INSTRUCTION.

The new engineering building, completed in 1913, affords every facility for work in engineering. It contains the physics, materials testing, and electrical laboratories, with lecture, recitation and drawing rooms in connection, as well as the engineering library. An extension of this building contains the wood and machine shops, all thoroughly equipped with the latest apparatus.

The old engineering building contains the mechanical engineering laboratory, forge, and auto shops.

The engineering library is a part of the main library of the College and is provided with the standard works on the several branches of engineering and allied subjects. To this is being added from time to time new books which are of special worth. The library is also supplied with about twenty of the leading journals and magazines on various engineering subjects.

GRADUATE COURSES.

The degree of Master of Science is conferred upon students holding the degree of Bachelor of Science, upon completion of one year of resident graduate work in engineering together with an acceptable thesis.

DEPARTMENT OF AGRICULTURAL ENGINEERING.**ASSISTANT PROFESSOR HOFFMAN.**

This department was established primarily for the instruction of students intending to make farming their life work; and secondarily to train teachers of agricultural engineering for high schools, and to prepare men for expert work in tractor operation, road making, silo building, automobile repair, farm concrete construction, etc.

Present day farm machinery requires for its successful use considerable knowledge of mechanics and electricity. The tractor and the automobile are today almost absolute essentials to successful farming. A knowledge of the principles underlying the use and operation of each part of these machines enables the farmer to correct the faulty and inefficient operation and often to prevent delay and loss due to breakdowns.

Special effort is put forth to make the work thoroughly practical, only so much theory being given as is necessary for a clear understanding.

A. E. 2. *Farm Motors.* Construction, adjustment, operation, care and repair of motive devices used on the farm; principally the horse, the gasoline and oil engine, the steam engine, the windmill, the electric motor, and the tractor.

Required of freshmen in agriculture, second term, 3 hours plus 4 hours practice.

A. E. 11, 12. *Farm Structures.* Location, design, and construction of farm buildings for all purposes. Study of heating, lighting, ventilation, water supply and sewage disposal for the farm home. Practice in construction of hog and poultry houses, etc.

Elective for juniors and seniors in agriculture, first and second term, 3 hours plus 3 hours practice.

A. E. 13. *Cement Construction.* Proportioning, mixing, reinforcing, placing of forms, seasoning, waterproofing, etc.

Elective for juniors and seniors in agriculture, third term, 3 hours practice.

A. E. 3b. *Farm Mechanics*. Blacksmithing on the farm, repair of farm machinery, pipe threading, etc. This is a six weeks' course, following Agron 3.

Required of freshmen in agriculture, second half of third term, 1 hour plus 6 hours practice.

A. E. 1. *Graphic Methods*. Making of maps, charts, curves, diagrams, etc., by which the meaning of agricultural data may be made understandable at a glance. Blueprinting.

Elective for juniors or seniors in agriculture, first term, 2 hours plus 2 hours practice.

SECONDARY COURSES.

A. E. 01, 02, 03. *Automobile Repair*. Construction, use, adjustment, operation, and repair of all parts of all makes of gasoline automobiles, tractors, etc. Cars brought to the shop are repaired by the students under direction of instructor.

Required of third year pre-engineering students, elective for others, first, second and third term, 1 hour plus 6 hours practice.

A. E. 071. *Farm Carpentry*. A course similar to A. E. 12, only more elementary in nature.

Required of fourth year pre-agricultural students, first term, 4 hours practice.

A. E. 072. *Farm Mechanics*. A course similar to A. E. 03, only more elementary in nature.

Required of fourth year pre-agricultural students, second term, 4 hours practice.

A. E. 011, 012, 013. *Automobile Shop Practice*. Construction, use, operation and repair of all parts of all makes of automobiles and tractors. Preliminary work covers the adjustment and study of construction of cars and engines with that true work upon equipment in our shop. This is followed by repair work on cars brought to the shop from outside sources. In this way the theory and practice are thoroughly co-ordinated and the student learns by doing.

Required of first year trades students in automobile mechanics, first, second, and third term, 1 hour plus 16 hours practice.

A. E. 021, 022, 023. *Advanced Automobile Shop Practice*. This is a continuation of A. E. 011, 012, 013. The practice

work in it takes up more difficult repair jobs on cars including the testing out of cars and engines, the making of special tools, etc.

Required of second year trades students in automobile mechanics, first, second, and third term, 8 hours practice.

A. E. 031, 032, 033. *Garage Management*. This course consists of the study and practice in garage management and study of tool room systems, garage records, supplies, handling of employees, arrangement of shop, selection of equipment, etc.

Required of second year trades students in automobile mechanics, first, second, and third term, 1 hour plus 4 hours practice.

A. E. 041, 042, 043. *Starting and Lighting Systems*. This course covers the theory and practice of construction, operation and repair of all types of starting and lighting systems, including magnetos.

Required of second year trades students in automobile mechanics, first, second, and third term, 3 hours plus 8 hours practice.

A. E. 051, 052, 053. *Storage Battery Repairing*. A study of theory and practice of storage battery construction, operation, repairs. Special emphasis on practical repair work.

Required of second year trades students in automobile mechanics, first, second and third term, 1 hour plus 6 hours practice.

A. E. 061, 062, 063. *Applied Mathematics*. A course in mathematics designed to meet the practical needs of trades students.

Required of first year trades students in automobile mechanics, first, second, and third term, 2 hours.

EQUIPMENT.

Automobile Shop. This shop has machine tool equipment of engine, lathe, grinder, speed lathe and drills for carrying on the machine work that comes up in connection with auto repair. Ample floor space is provided for carrying on adjustments and repair of several cars at one time. This shop is well stocked with automobile accessories such as gaskets, lock washers, taper pins, rivets, shim stock, ignition wire, etc. A complete assortment of all kinds of bolts, nuts and screws used in automobile construc-

tion is on hand. The tool room is fully equipped with solid and socket wrenches, screw plates, soldering outfits, files of all kinds, and in fact nearly everything that a first class garage tool room has. Special tools only found in the best and larger shops are supplied, and this equipment is being constantly added to. An up-to-date electric and gasoline vulcanizer fitted for both shoe and tube work is also provided.

For the study of the automobile engines the shop has a complete Willys-Knight power plant, a six cylinder Buick, a Hudson, a Cadillac, a Rutenber and a Ford. Among the standard type carburetors represented in our shops are the Rayfield, Zenith, and Stromburg, besides several other well known makes. In additoion to the regular ignition system on the above cars a High Tension Splitdorf-Dixie Magneto and a complete Atwater-Kent battery system give additional opportunity for ignition study.

In addition to this when necessary the equipment of the electrical and mechanical laboratories, machine and wood shops are available for the automobile course students.

DEPARTMENT OF CIVIL ENGINEERING.

PROFESSOR HITCHCOCK.

ASSISTANT PROFESSOR JOURDAN

The work in the department of civil engineering is designed to furnish a thorough course of theoretical instruction accompanied and illustrated by a large amount of practice.

While the course is made practical by giving the student a large amount of practice in the field, draughting room, and laboratory, the main object is the development of mental faculties and judgment. The power to acquire information and the ability to use it are held to be of greater value than any amount of so-called practical knowledge.

The aim of the department is to turn out not graduate engineers only, but men who are so equipped that they will be useful men in the engineering profession and with a few years of actual experience in that profession will be truly civil engineers.

C. E. 1. *Plane Surveying*. This is a brief course in the care and use of engineer's surveying instruments. The greater part of the time is devoted to exercises and practical problems involving the use of the tape, level and transit.

Required of sophomores in engineering and agriculture, first term, 1 hour plus 6 hours practice.

C. E. 3. *Topographic Surveying*. This course is a continuation of C. E. 1. The text book work deals with the use and care of instruments, land and topographic surveying. The field and drafting work is devoted to exercises in the use of engineer's instruments and plotting of plane surveys.

Required of sophomores in civil and irrigation engineering, third term, 2 hours plus 6 hours practice. Prerequisite, M. E. 2 and C. E. 1.

C. E. 11. *Advanced Surveying*. This course is a study of the more precise methods of surveying and leveling. In the field, the time is devoted to practice with the plane table baseline measurement, determination of latitude and longitude, triangulation and precise leveling.

Required of juniors in civil and irrigation engineering, first term, 2 hours plus 4 hours practice. Prerequisite, C. E. 1 and 3.

C. E. 12. *Railroad and Canal Surveys.* A study of the theory of field and office work necessary for laying out simple, compound, transitory and vertical curves. This course also includes cross section work and the computation of earth work.

Required of juniors in civil and irrigation engineering, second term, 2 hours plus 6 hours practice. Prerequisite, C. E. 11.

C. E. 21. *Graphic Statics.* This subject treats of the solution of engineering problems by graphical methods. Application is made to a variety of practical problems in stress computations.

Required of juniors in engineering, first term, 6 hours practice. Prerequisite, M. E. 2 and 23.

C. E. 22. *Bridge Stresses.* The analysis of simple bridge and roof trusses by algebraic and graphical methods. A variety of problems are also given involving stresses caused by dead and moving loads, special attention being given to subject of train loads.

Required of juniors in civil engineering, second term, 4 hours. Prerequisite, C. E. 21.

C. E. 23. *Structural Design.* Complete design with detail drawings and estimate of weights and cost of a wooden roof truss.

Required of juniors in civil engineering, third term, 6 hours practice. Prerequisite, C. E. 21 and M. E. 21, 22, and 23.

C. E. 31. *Structural Design.* Complete design with detail drawings and estimate of weights and cost of a steel roof truss.

Required of seniors in civil engineering, first term, 6 hours practice. Prerequisite, C. E. 23.

C. E. 32. *Bridge Design.* This course includes the complete design of a riveted or pin connected railway bridge, stress sheet, general drawings, and estimates of weights and costs.

Required of seniors in civil engineering, second term, 6 hours practice. Prerequisite, C. E. 31.

C. E. 33. *Bridge Design.* This course is a continuation of C. E. 32.

Required of Seniors in civil engineering, third term, 4 hours practice.

C. E. 41. *Sewage*. A study of the design and construction of sewage systems, composition of sewage, changes produced by bacteria, together with modern methods of treatment, purification and final disposal

Required of seniors in civil engineering, first term, 3 hours.
Prerequisite, M. E. 43 and I. E. 3.

C. E. 42. *Materials of Construction*. This course comprises a study of the physical and mechanical properties and methods of manufacture of the principle materials of construction. In the laboratory standard tests are made on wood, steel, iron, cement and concrete.

Required of seniors in engineering, second term, 2 hours plus 6 hours practice. Prerequisite, M. E. 21 and 22.

C. E. 43. *Reinforced Concrete and Masonry*. This course includes a study of the principles of reinforced concrete construction, analysis and simple problems in design, together with the theory governing the design of masonry structures.

Required of juniors in civil and irrigation engineering, third term, 4 hours. Prerequisite, M. E. 21, 23, 43 and C. E. 21.

C. E. 53. *Highway Engineering*. A study of the theory and practice of economic highway and pavement construction and maintenance, including a study of the needs of traffic, of its effect on the road surface and the materials of construction.

Required of seniors in civil engineering, third term, 3 hours.

C. E. 63. *Business Law for Engineers*. A study of the Elements of Law as related to engineering works together with the preparation of engineering specifications.

Required of seniors in engineering, third term, 2 hours.

Thesis for the Degree of B. S. in C. E. Original investigation of some engineering problem to be decided upon by the head of the department and the dean.

Required of seniors in civil engineering, second term, 2 hours; third term, 3 hours.

EQUIPMENT.

Surveying. The surveying equipment is in excellent condition, the greater part of it being entirely new. It includes one 8-inch transit theodolite complete, five complete engineers' transits of various makes, three Wye levels, two Dumpy levels, one precision Dumpy level with a precise level rod, one complete plane table with alidade of the latest pattern, on traverse table complete, one Saegmueller solar attachment, one latitude level, one Aneroid barometer, three hand levels, one binocular, together with various miscellaneous instruments such as stadia, level and line rods, chains, tapes and bobs. The equipment also contains various instruments available in large offices to facilitate drafting and computing. New additions are being made from time to time as the growth of the work necessitates.

Materials Laboratory. The materials laboratory is in a well lighted basement room with a concrete floor admirably adapted for this purpose. There is now installed in it a universal Olsen testing machine of 60,000 pounds capacity. It is provided for direct motor drive and has an autographic attachment. It is completely equipped with all the necessary accessory attachments for tensile, compressive, transverse and shearing tests. There is also a beam loading table for the flexible tests of re-inforced concrete beams. The laboratory is further equipped with all the required apparatus for making standard commercial tests on cement, concrete, brick and building stone. This includes a 200,000 pound Olsen hydraulic machine for compression tests, Riehle and Fairbanks automatic shot machines for tensile tests, Vicat and Gilmore needles, specific gravity apparatus, sieves and shaker, mechanical mixer, steaming apparatus for accelerated tests of soundness, water tank, moist closet, slate topped work tables, etc. The laboratory equipment is constantly being added to and improved.

DEPARTMENT OF ELECTRICAL ENGINEERING.

PROFESSOR GODDARD.

The course in electrical engineering is designed to give the student not only a liberal education, but also a thorough knowledge of the fundamental laws of electricity through theory and practice, so that he may attack any problem that may arise with confidence in himself and his ability to work it out to a successful conclusion. The chief purpose and aim of the course is to teach scientific and systematic methods of solving problems, in general, for rapid and accurate results, and not the solution of a few particular ones. The engineer of today and especially in a new country like our southwest seldom meets two propositions exactly alike, but rather each undertaking is a new problem and has to be solved by methods best suited to its particular case. The ability to choose the best methods of attack and to carry these through with rapidity and accuracy to a satisfactory conclusion makes the successful engineer.

E. E. 1, 2. *Elements of Electrical Engineering.* Theory of electrostatics, electromagnetics, and electric circuits. This course gives a thorough grounding in the fundamentals of electrical engineering.

Required of juniors in engineering, first and second term, 3 hours. Prerequisite, Phys. 3 and Math. 33.

E. E. 3. *Dynamo Electric Machinery.* A continuation and development of E. E. 1, including direct current electro-dynamic machinery.

Required of juniors in mechanical and electrical engineering, third term, 3 hours. Prerequisite, E. E. 2.

E. E. 11. *Alternating Current Theory.* Theory of alternating current circuits and apparatus, single and polyphase, including mathematical and graphic methods of calculation and representation.

Required of seniors in electrical engineering, first term, 5 hours. Prerequisite, E. E. 3.

E. E. 12. *Alternating Current Theory*. A continuation of E. E. 11, including a more critical study of A. C. apparatus.

Required of seniors in electrical engineering, second term, 5 hours. Prerequisite, E. E. 11.

E. E. 13. *Electric Power Transmission*. A study of the transmission of electrical energy for lighting and power purposes by different systems; wiring methods with insurance rules and regulations; the design, construction, and maintenance of transmission lines of high and low potentials.

Required of seniors in electrical engineering, third term, 4 hours. Prerequisite, E. E. 1 and 2.

E. E. 23. *Electrical Engineering Design*. The design of electro-magnets and direct current dynamo-electric machinery.

Required of seniors in electrical engineering, third term, 1 hour plus 6 hours practice. Prerequisite, E. E. 3.

E. E. 43. *Electrical Engineering Design*. A continuation of E. E. 7, including the design of alternating current generators, motors and transformers.

Elective for seniors in electrical engineering, third term, 6 hours practice. Prerequisite, E. E. 11 and 12, and registration in E. E. 23.

E. E. 53. *Electric Railways*. A study of electric railway systems and their principal parts, including track and trolley construction, motors, and their characteristics, rolling stock, etc.

Elective for seniors in electrical engineering, third term, 3 hours. Prerequisite, E. E. 1 and 2.

E. E. 63. *Telephoning Engineering*. A study of telephone systems and telephone apparatus.

Elective for seniors in electrical engineering, third term, 3 hours. Prerequisite, E. E. 1 and 2.

E. E. 73. *Illuminating Engineering*. A study of different types of electric lamps, shades, diffusers, and reflectors; their construction and characteristics; photometry; the calculation of proper illumination and spacing of lamps for different purposes.

Elective for seniors in electrical engineering, third term, 3 hours. Prerequisite, E. E. 1 and 2.

E. E. 83. *Storage Battery Engineering*. A study of storage cells, their construction, action, and characteristics, with methods of application to practical operation.

Elective for seniors in electrical engineering, third term, 3 hours.
Prerequisite, E. E. 1 and 2.

E. E. 93. *Power Transmission*. The design and construction of high potential power transmission lines.

Elective for seniors in electrical engineering, third term, 3 hours,
Prerequisite, E. E. 11 and 12, and registration in E. E. 13.

E. E. 33. *Electrical Engineering Laboratory*. The operation and testing of electric instruments, lamps, motors, generators, and auxiliary apparatus.

Required of juniors in engineering, third term, 6 hours practice.
Prerequisite, E. E. 1 and 2.

E. E. 31. *Electrical Engineering Laboratory*. A continuation of E. E. 33, including the transformer, polyphase power measurement, and alternating current generator.

Required of seniors in electrical engineering, first term, 6 hours practice. Prerequisite, E. E. 33, and registration in E. E. 11.

E. E. 32. *Electrical Engineering Laboratory*. A continuation of E. E. 31, including the induction motor, synchronous motor and rotary converter.

Required of seniors in electrical engineering, second term, 6 hours practice. Prerequisite, E. E. 11 and 31, and registration in E. E. 12.

Thesis for Degree of B. S. in E. E. Original investigation in some engineering problems to be decided upon by the head of the department and the dean.

Required of seniors in electrical engineering, second term, 2 hours, and third term, 3 hours.

SECONDARY COURSE.

E. E. 03. *Applied Electricity*. This is a continuation of Phys. 03, *Practical Electricity*, and takes up the applications of electricity to the motor, generator, transformer, etc. Further, it covers in a brief way the place of electricity in the in-

dustrial world. Laboratory work on the wiring and operation of electric machinery is given with this course.

Required of fourth year pre-engineering students, third term, 3 hours plus 4 hours practice.

EQUIPMENT.

The electrical laboratory contains a varied collection of modern machinery, arranged for general utilization, test work, or special study. These machines are served by a system of conductors installed in conduit, whereby any machine may be connected electrically to any other through a large plug switch-board. Provision is also made so that the different motors and generators may be mechanically connected either by means of belts or flexible coupling. The laboratory is also equipped with suitable instruments for measuring electrical power, potentials, and currents, as well as apparatus to facilitate the carrying on of all of the common tests of electrical machinery, both stationary and dynamic.

A partial list of the above-mentioned apparatus follows. New additions are constantly being made as the needs of the laboratory demand or new things are placed upon the market.

A 22½ K. W. bank of transformers for transforming 2,200 volt 60 cycle alternating current from the Las Cruces Electric Company's plant to various potentials for use about the laboratory.

A 72 receptible plug switch board.

A 10 H. P., three phase, 220 volt, induction motor.

A 3 H. P., three phase, 220 volt, induction motor.

A 9 K. W. 250 volt direct current generator.

A 7½ K. W. 250 or 110 volt direct current generator.

A 3 H. P. 110 volt Westinghouse Type SK. motor.

A 2 K. W. rotary converter, 250 volts D. C. 110,—178 volts A. C.

A 2½ K. W. 110 volt direct current generator.

A 2½ K. V. A. 110 volt alternating current three phase generator.

A $2\frac{1}{2}$ K. V. A. 220-110 volt, 110-55 volt special test transformer with 86% taps for Scott three phase, two phase transformation.

Two 2 K. V. A. 220-110 volt, 110-55 volt test transformers.

Three 5 K. W. lamp banks with switching arrangements.

An electric arc welding plant.

A polyphase power measurement switchboard.

A General Electric Company's three element oscillograph with auxiliary apparatus for observing or photographing all alternating current phenomena.

A Tungas vapor tube rectifier for rectifying alternating current for storage battery charging.

A complete wireless telegraph plant for transmission and receiving.

Full equipment of no-voltage release and overload release, motor starting boxes, auto transformers and starters for induction motors, field and armature resistances, circuit breakers, fuse blocks, switches, inductances, condensers, prony brakes, and brake pulleys, samples of arc and incandescent lamps, including the new nitrogen filled lamp.

DEPARTMENT OF IRRIGATION ENGINEERING.

ASSISTANT PROFESSOR JOURDAN.

Irrigation engineering comprises the design, construction and maintenance of irrigation systems both large and small.

Especial attention is given in the first three years of the irrigation course to the foundation subjects upon which all engineering practice is based. Courses have been selected from the departments of agriculture, mechanical, electrical, and civil engineering to give the student a good liberal education and a general knowledge of engineering. Surveying is covered in all its phases; steam and gas engines, electrical motors and machinery, design of structure and the various branches of agriculture all receive attention. In the junior and senior years the irrigation courses take up the subject of irrigation from all standpoints. Water supply, dams, and irrigation structures, canal systems, drainage, measurement of water, pumping and irrigation laws are studied.

Situated as the College is in the Rio Grande Project 8th, United States Reclamation Service, the student in irrigation engineering enjoys opportunities of study and observation of irrigation problems at close hand.

Upon completion of the irrigation course, the graduate will have a good knowledge of the many problems confronting the irrigation engineer in the southwest and should be able to do creditable work in this most attractive branch of the engineering profession.

I. E. 3. *Hydraulics*. This course consists of a brief study of the elementary principles of the mechanics of fluids and a more thorough study of the flow of water under various conditions; including measuring devices such as orifices, weirs, rating flumes, and current meter. Some time is devoted to theory and construction of pumping machinery and hydraulic motors.

Required of juniors in engineering, third term, 4 hours. Prerequisite, M. E. 23 and M. E. 21 and 22.

I. E. 33. *Principles of Irrigation*. History of irrigation, preparation of land for irrigation, the use of water applied to the soil, growth of plants, pumping and location of ditches, methods of irrigating, measurement and duty of water, management of canal systems, inspection trips, testing and practice work.

Required of juniors in irrigation engineering and agriculture, third term, 3 hours plus 4 hours practice.

I. E. 11. *Irrigation Engineering*. Planning irrigation systems, the location, design and cost of canals, study of irrigation structures, dams and reservoirs, pumping for irrigation, water losses from reservoirs and canals, management of irrigation systems.

Required of seniors in irrigation engineering, first term, 5 hours. Prerequisite, I. E. 3 and 33.

I. E. 21. *Water Power Engineering*. A study of the theory, investigation, and development of water power. The work of the text will be supplemented by a variety of practical problems.

Required of seniors in irrigation and civil engineering, first term, 4 hours. Prerequisite, I. E. 3, M. E. 23 and M. E. 21 and 22.

I. E. 31. *Drainage*. Movement of water in soils, water-logging and alkali, types of drain and drainage systems, organization of drainage districts.

Required of seniors in irrigation engineering, first term, 3 hours. Prerequisite I. E. 33.

I. E. 23. *Public Water Supply*. This course covers the theory and development of water supplies for domestic, manufacturing, and fire service. It deals with the quantity of water, sources of supply, quality of water from different sources, communicable diseases, methods of purification and distribution of same.

Required of seniors in irrigation and civil engineering, third term, 3 hours. Prerequisite, registration in I. E. 3.

I. E. 12, 13. *Irrigation Design*. The design and estimating of costs of irrigation structures such as canal linings, flumes, headworks, tunnels, drops, distribution boxes, etc.

Required of seniors in irrigation engineering, second and third term, 8 hours practice. Prerequisite, I. E. 11.

I. E. 43. *Irrigation Institutions.* The laws of the surface and underground waters of the western states, rights of way, irrigation organizations, irrigation securities and investments.

Required of seniors in irrigation engineering, elective for seniors in agriculture, third term, 3 hours. Prerequisite, I. E. 33 and 11.

Thesis for the Degree of B. S. in I. E. Original investigations of some engineering problems to be decided upon by the head of the department and the dean.

Required of seniors in irrigation engineering, second term, 2 hours, third term, 3 hours.

EQUIPMENT.

For field work in irrigation engineering, hydraulic apparatus is provided such as water stage registers, hook gauges, weirs, current meters, etc.

DEPARTMENT OF MECHANICAL ENGINEERING.**PROFESSOR BARNES.****PROFESSOR BOWEN.****PROFESSOR GODDARD.****ASSISTANT PROFESSOR HOFFMAN. ASSISTANT PROFESSOR JOURDAN**

The course in mechanical engineering offers instruction in the scientific principles forming the foundation of all engineering, but with special regard to the generation and measurement of power, to the principles of design, construction and operation of machinery, and to the commercial practice of manufacturing and management. The field described above is so broad that the graduate from this work need not confine himself to a particular profession, but is especially fitted to enter upon positions leading to superintendence and management of enterprises, and as a rule should outstrip his competitor who lacks the thorough and systematic training given by this course. The rapid growth of the southwest, with its railroads, power plants and mines, demands an engineer who not only is well trained in his profession but understands the essential principles of efficiency and organization.

M. E. 1, 2, 3. *Engineering Drawing*. Lettering, title designing, dimensions, geometrical problems, orthographic projection, intersection and development of surfaces. Working drawings, detailing and dimensioning, assembly drawings, tracing and blue-printing, shading and isometric drawings.

Required of freshmen in engineering, first, second, and third term, 4 hours practice.

M. E. 11, 12. *Descriptive Geometry*. In this course problems are given involving the application of principles relating to the point, line and plane; together with a study of the generation and classification of lines, surfaces, tangent planes to surfaces, plane sections, intersections, and developments. The time in the draughting room is devoted to a study of more general problems requiring more time for their solution.

Required of sophomores in engineering, first and second term, 3 hours practice. Prerequisite, M. E. 2.

M. E. 13. *Machine Drawing*. Representation, dimensioning and specification of machine parts, study of standard commercial forms, sketches, detail and assembly drawings, simple designing from observation and empirical rule.

Required of sophomores in mechanical and electrical engineering, third term, 4 hours practice. Prerequisite, M. E. 1, 2, 3, 11, and 12.

M. E. 42. *Machine Design*. Machine drawing is merged into machine design applying the principles of strength of materials and mechanics with commercial practice to the design of elements or machines, such as journals, gears, cams, and finally the complete design of a simple machine.

Required of juniors in mechanical and electrical engineering, second term, 4 hours practice. Prerequisite, M. E. 13, 21, 22 and 41.

M. E. 31. *Machine Design*. Continuation of M. E. 6, involving the complete design of a more complicated machine.

Required of seniors in mechanical engineering, first term, 4 hours practice. Prerequisite, M. E. 42.

M. E. 32 *Steam Engineering Design*. In this course the student is given his choice of designing either the steam engine or the steam boiler combining the theory, practice, and principles of operation of these elements with the question of strength, proportion, and size.

Required of seniors in mechanical engineering, second term, 4 hours practice. Prerequisite, M. E. 31.

M. E. 33. *Oil and Gas Engine Design*. In this course the student is required to design an internal combustion engine, combining theory, practice, and principles of operation of these units with the question of strength, proportion, and size.

Required of seniors in mechanical engineering, third term, 4 hours practice. Prerequisite, M. E. 31.

M. E. 22. *Statics*. The work in this course embraces the study of the laws of equilibrium, composition and resolution of forces, center of gravity, moment of inertia and the laws of

friction. Analytic and graphic methods applied to the solution of problems taken from engineering practice.

Required of sophomores in engineering, third term, 5 hours. Prerequisite, Math. 32.

M. E. 25. *Strength of Materials*. The laws of stress, strain, and elasticity of materials. The theory of beams, columns and torsion of shafts, reinforced concrete and use of structural steel handbook. Practical problems on the design and investigation form an important part of the course.

Required of juniors in engineering, first and second term, 3 hours. Prerequisite, Math. 33 and M. E. 23.

M. E. 43. *Dynamics*. Principles of velocity, acceleration, momentum and impact; work, energy, and power, power transmission, dynamometers, dynamics of the steam engine and other machines. Applications and problems from engineering.

Required of juniors in engineering, third term, 3 hours. Prerequisite, M. E. 23, 21 and 22.

M. E. 52. *Elements of Power Engineering*. Types and general construction, theory and principles of operation of steam boilers, engines, power plant auxiliaries, gas producers and internal combustion engines. Visits to power plants.

Required of sophomores in engineering, second term, 5 hours.

M. E. 41. *Mechanism*. A study of motion and forms of mechanism, velocity and acceleration of diagrams, instantaneous centers, belting, cams, gear teeth and gear trains, link work and valve gears, practical problems.

Required of juniors in mechanical and electrical engineering, first term, 3 hours. Prerequisite, Phys. 3 and Math. 3.

M. E. 62. *Applied Thermodynamics*. This subject treats of the solution of problems involving the action of heat as applied to steam engines, gas engines and other heat motors. Laws of thermodynamics of gases and saturated vapors and superheated steam. The application of these laws to air compressors and heat engine performance and efficiency.

Required of juniors in mechanical and electrical engineering, second term, 5 hours. Prerequisite, Phys. 3, Math. 33 and M. E. 52.

M. E. 63. *Refrigeration and Heat Engines*. This course is a continuation of M. E. 62, but dealing more specifically with the thermodynamics, study, and design of refrigerating machinery, gas engines, steam engines and turbines. Practical problems in design and performance of these machines are the features of the work.

Required of juniors in mechanical and electrical engineering, third term, 1 hour plus 6 hours practice. Prerequisite, M. E. 62.

M. E. 51. *Power Plant Engineering*. The proper selection of power plant apparatus, cost of power as influenced by equipment, load, operation and maintenance, depreciation, insurance, etc. Comparative merits of steam and gas power, problems.

Required of seniors in mechanical and electrical engineering, first term, 4 hours. Prerequisite, M. E. 63 and 72.

M. E. 71. *Heating and Ventilation*. Methods of heating and ventilating buildings, direct steam, indirect heating, hot water, furnace, district heating, elements of heating, and ventilating systems. Calculation of heat required for rooms, and heating and ventilating design.

Required of seniors in mechanical engineering, first term, 4 hours. Prerequisite, M. E. 62.

M. E. 53. *Shop Organization*. The planning of factory buildings and influence of design on their productive capacity, staff and departmental organization, shop departments, office systems, employment of labor and efficiency, principles underlying good management.

Required of seniors in mechanical engineering, third term, 3 hours. Prerequisite, senior engineer.

M. E. 72. *Mechanical Engineering Laboratory*. Calibration and study of engineering test apparatus such as steam gages, indicators, planimeters, meters, speed counters, steam and fuel calorimeters, gas analysis, valve setting, technical sketches, written reports of tests.

Required of juniors in mechanical and electrical engineering, second term, 6 hours practice. Prerequisite, Phys. 3 and M. E. 52.

M. E. 81. *Mechanical Engineering Laboratory*. Operation and performance tests of boilers, pumps, steam and gas engines, etc., with reports upon the same. For civil and irrigation engineers an abridged course is given covering work of M. E. 72 and 81 as outlined for mechanical and electrical engineers.

Required of seniors in engineering, first term, 6 hours practice. Prerequisite, Phys. 3 and M. E. 52.

M. E. 82. *Mechanical Engineering Laboratory*. Tests of air compressor, power and refrigerating plant. Further work in steam and gas engines, written reports.

Required of seniors in mechanical engineering, second term, 6 hours practice. Prerequisite, M. E. 81.

Thesis for Degree of B. S. in M. E. Original investigation of some engineering problem to be decided upon by the dean.

Required of seniors in mechanical engineering, second term, 2 hours, third term, 3 hours.

SECONDARY COURSES.

M. E. 01. *Free-Hand Drawing*. Free-hand drawing, outline drawing from the blackboard, printing and title designing, perspective and relative proportions of simple objects gradually developing to sketches of more difficult objects, shop sketches with dimensions such as book cases, tables, etc., for use in shop work.

Required of first year students in pre-college courses, first term, 4 hours practice.

M. E. 02, 03. *Mechanical Drawing*. Instrumental drawing, ink work in lettering, use of instruments, inking, geometric drawing, orthographic projection, assembly and detail drawings of tools, machine parts, etc.

Required of first year students in pre-college courses, second and third term, 4 hours practice.

M. E. 051, 052, 053. *Applied Drawing*. Sketching of machine parts, making of technical sketches, reading of blue prints

and draws, wiring diagrams, etc., especially as applied to the automobile industry.

Required of first year trades students in automobile mechanics, first, second, and third term, 4 hours practice.

M. E. 041. *Steam Engines and Boilers*. A short practical course covering principles and operations of these units.

Required of fourth year pre-engineering students, first term, 3 hours plus 4 hours practice.

M. E. 042. *Oil and Gas Engines*. A short course covering the principles of operation and practice with this type of units.

Required of fourth year pre-engineering students, second term, 3 hours plus 4 hours practice.

EQUIPMENT.

Mechanical Laboratory. The main equipment in the mechanical laboratory consists of one 40-horsepower return tubular boiler, one 50-horsepower Hoppes feed water heater and purifier, one 30-horsepower Murray-Corliss engine, one 15-horsepower Witte gas engine, one 4-horsepower Fairbanks-Morse oil engine, besides several other gas and oil engines, one 8-horsepower Shipman steam engine and oil burning boiler, one compound two-stage air compressor, one complete $\frac{1}{2}$ -ton refrigerating plant, one Westinghouse turbo generator, one submerged steam condenser, arranged for test purposes. A Duplex steam pump and two $\frac{3}{4}$ -inch injectors are especially arranged for testing. In addition to this the laboratory is well equipped with test apparatus such as indicators, pressure gages, calorimeters, tachometers, weighing tanks, etc. The entire laboratory equipment is for experimental purposes and is so arranged that test work of all descriptions can be conducted with it.

PRACTICAL MECHANICS.

The work in practical mechanics covers the various lines suggested in the following subjects: Machine shops and forging, pattern making and foundry practice, woodwork, shop methods, manual training.

M. E. 91. *Woodwork*. Practice in marking, gaging, sawing, planing, advancing as rapidly as possible in the various joints used in carpentry work to making equipment for laboratories and offices.

Required of freshmen in engineering, first term, 4 hours practice.

M. E. 92, 93. *Pattern Making*. The practice in this course consists of making patterns from drawings and models, taking into consideration draft, finish and shrinkage. Inspection trips.

Required of freshmen in engineering, second and third term, 4 hours practice.

M. E. 101. *Machine Shop*. This course consists of practice in chipping, filing, screw-cutting, tapen turning, chuck work, shaping, milling, gear cutting and general repair work for the various laboratory machinery and apparatus.

Required of sophomores in engineering, first term, 4 hours practice.

M. E. 102. *Forge Shop*. Heating, bending, welding of steel and iron, tempering and dressing of tools.

Required of sophomores in engineering, second term, 4 hours practice.

M. E. 103. *Machine Shop*. A continuation of M. E. 101.

Required of sophomores in mechanical and electrical engineering, third term, 4 hours practice.

M. E. 112. *Shop Methods*. This subject is an advanced course for mechanical engineers, taking up the practice in commercial manufacture in all its phases especially from a financial standpoint.

Required of seniors in mechanical engineering, third term, 3 hours.

SECONDARY COURSES.

M. E. 011, 012, 013. *Manual Training*. This course is to familiarize the student with the use and care of tools. Bench work, together with wood-working machinery constitutes the general outline of the work given. Students making small pieces of furniture such as book cases, small cupboards, music cases, fold-

ing screens, etc., may keep same by paying for the amount of material used.

Required of first year students in pre-college courses, first, second, and third term, 6 hours practice.

M. E. 021. *Machine Shop*. A course similar to M. E. 101, only less technical and more practical in nature.

Required of second year pre-engineering students, first term, 4 hours practice.

M. E. 022. *Forge Shop*. A course similar to M. E. 102, for preparatory students.

Required of second year pre-engineering students, second term, 4 hours practice.

M. E. 023. *Machine Shop*. A continuation of M. E. 021.

Required of second year pre-engineering students, third term, 4 hours practice.

M. E. 031, 032, 033. *Woodwork and Pattern Making*. Courses similar to M. E. 91, 92, 93, for preparatory students.

Required of second year pre-engineering students, first, second, and third term, 4 hours practice.

M. E. 061. *Machine Shop*. Practice work in machine shop especially arranged for automobile mechanics.

Required of first year trades students in automobile mechanics, first term, 4 hours practice.

M. E. 062. *Forge Shop*. Heating, bending, welding, and handling of steel and iron, with special reference to the need of automobile mechanics.

Required of first year trades students in automobile mechanics, second term, 4 hours practice.

M. E. 063. *Machine Shop*. A continuation of M. E. 061.

Required of first year trades students in automobile mechanics, third term, 4 hours practice.

EQUIPMENT.

Machine Shop. One 16 in. engine lathe with compound rest and taper attachment, one 14 in. x 6 ft. standard engine lathe, one 12 in. x 5 ft. standard engine lathe, one 13 in. x 5 ft. engine lathe, one 24 in. x 6 ft. planer, one 14 in. shaper, one 22 in.

power drill press, one small drill press, one Cincinnati milling machine, one power hack saw, one improved double wheel emery grinder, an assortment of chucks, small tools, etc., one Grenard Arbor press.

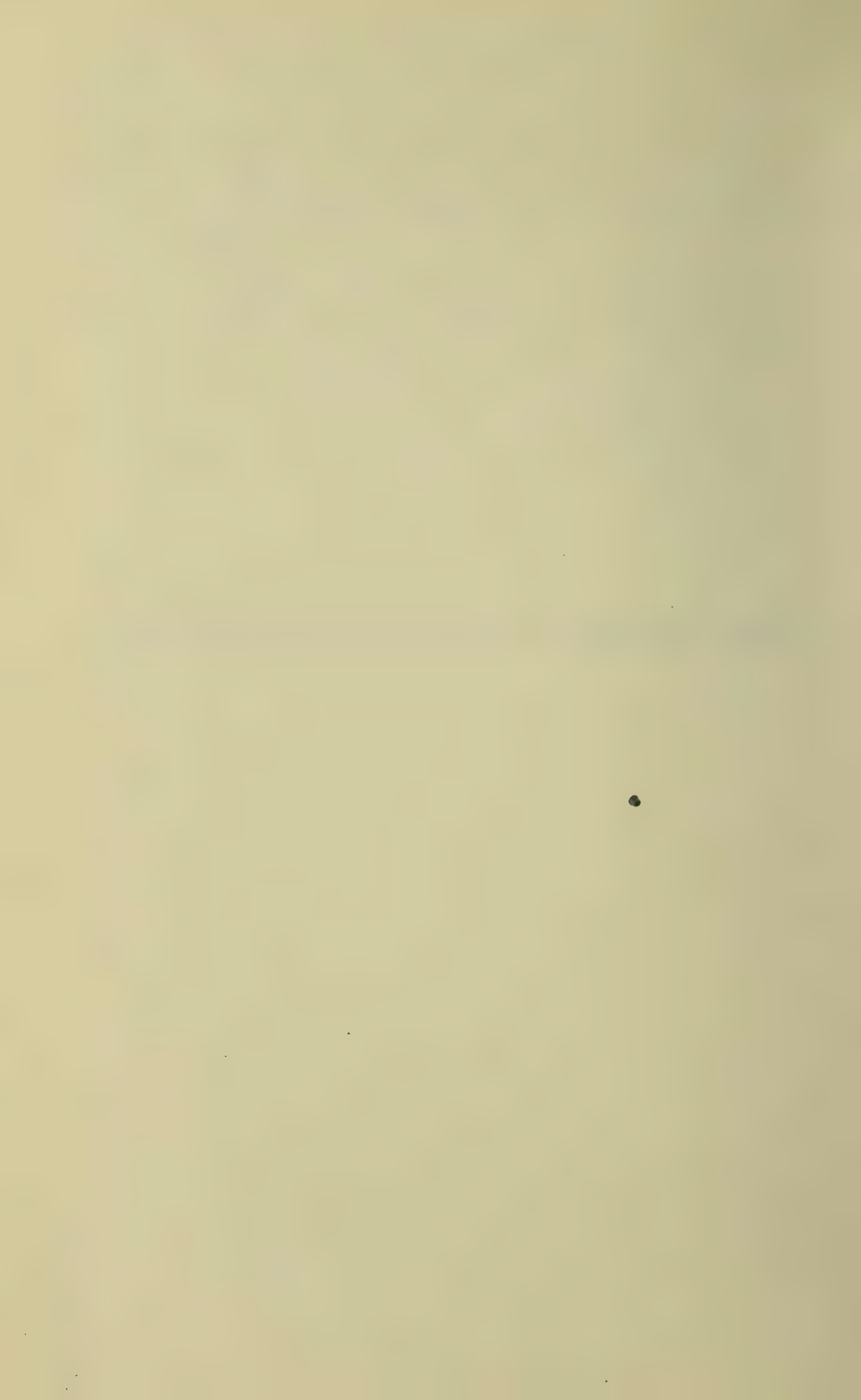
Wood Shop. The wood shop equipment consists of 20 benches equipped with all necessary small tools for doing ordinary work, 6-10 in. lathes, one 8 in. x 10 ft. lathe, one combination rip and cut off saw, one Fay and Egan horizontal chisel power mortiser, one Fox trimmer, one large grindstone, one foot power mortising machine, one band saw, one combination Oliver hand plane, one combination emery wheel, grinder and oil stone.

Both the machine shop and the work shop have individual tool rooms where supplies and special tools are kept and issued to the student and recorded on daily tool sheets.

Forge Shop. Twelve down draft forges, twelve anvils, one drill press, one swedge block and all necessary hammers, cutters, hardies and small tools.

The School of General Science

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The School of General Science

FACULTY.

AUSTIN DANIEL CRILE, President of the College.

JOHN HENRY VAUGHAN, A. M., Dean of the School of General Science.

CLARENCE TURPIE HAGERTY, M. S., Professor of Mathematics and Astronomy.

MERRITT LORRAINE HOBLIT, A. B., Professor of Modern Languages.

PEARL CHERRY MILLER, B. S., Professor of Home Economics.

SHERMAN BROWN NEFF, Ph. D., Professor of English.

DAYTON EUGENE MERRILL, M. S., Professor of Biology.

LOUIS ALLEN HIGLEY, Ph. D., Professor of Chemistry.

SEIBERT S. HOOKLAND, Professor of Commerce.

JOHN GEORGE GRIFFITH, M. S., Professor of Physical Education.

SEELEY ARTHUR WALLEN, First Lieutenant United States Army, Retired, Professor of Military Science and Tactics.

JAMES MARSHALL MCARTHUR, B. S., Acting Professor of Vocational Education.

MARY FRANCES WINNINGHAM, A. B., Assistant Professor of Mathematics.

FREDERICK CONRAD WERKENTHIN, A. M., Assistant Professor of Biology.

JOSE QUINTERO, B. S., Assistant Professor of Chemistry.

FLOY EDNA FRENCH, Instructor in English.

HELEN IDA THISSELL, Instructor in Home Economics.

GLADYS ELIZABETH CARROON, B. Pd., Instructor in Commerce.

ELIZABETH CURTIS FOSTER, B. S., Instructor in English.

DONALD HUNTER COOK, B. S., Instructor in Chemistry.

GENEVIEVE WOOD, Instructor in Music.

The School of General Science

The School of General Science comprehends the following departments of instruction:

- I. Department of Biology.
- II. Department of Chemistry.
- III. Department of Commerce.
- IV. Department of Economics.
- V. Department of English.
- VI. Department of Geology.
- VII. Department of History.
- VIII. Department of Home Economics.
- IX. Department of Mathematics and Astronomy.
- X. Department of Military Science and Tactics.
- XI. Department of Modern Languages.
- XII. Department of Music.
- XIII. Department of Physical Education.
- XIV. Department of Physics.
- XV. Department of Vocational Education.

It is the aim of the School of General Science, in addition to supplementing the courses in agriculture and engineering, to offer a liberal college education to students who do not wish to specialize in either of these professions. Abundant opportunity is provided for advanced work in practically all of the different departments.

DEPARTMENT OF BIOLOGY.

PROFESSOR MERRILL.

ASSISTANT PROFESSOR WERKENTHIN

In the department of biology, instruction is given in the various phases of the biological sciences as a basis for the study of pure science or for the practical application of biology to other lines of work, such as agriculture, home economics, etc. All branches of these last named lines of activity touch directly upon life in its various manifestations, so the need for a thorough understanding of the underlying principles of biology is clearly apparent. The following descriptions of the courses offered in the department will make more evident the close application of biology to the practical side of the student's education.

SECONDARY COURSES.

The work in the secondary courses in zoology, physiology and botany is elementary and general in character and designed to present the basic principles of each subject, to introduce the student to a limited number of types of the larger groups of animals and plants, to elementary human physiology and hygiene, and to give a foundation for the economic consideration of biology.

Biol. 01. *Elementary Zoology*. A course introductory to general biological principles through recitations, observation of animal life in the field, and the study of laboratory material illustrative of elementary morphology. Text-book, Linville and Kelley's *Text-Book in General Zoology*. Professor Merrill.

Required of second year students in pre-college courses, except engineering, first term, 4 hours plus 2 hours laboratory.

Biol. 02. *Elementary Physiology*. An elementary course in human physiology and hygiene, aimed to be of direct, everyday benefit to the student. The consideration of functions will be coupled up with the work in zoology of the preceding term. Recitations will be supplemented with demonstrations and models and lantern slides. Text-book, Conn and Budington's *Advanced Physiology and Hygiene*. Professor Merrill.

Required of second year students in pre-college courses, except engineering, second term, 5 hours.

Biol. 03. *Elementary Botany*. An elementary course in botany to follow Biol. 1. It will deal with representatives of the four great groups of the plant kingdom, but mainly with the morphology and physiology of the flowering plants. Plant life in the field will be studied as to factors governing growth and distribution, and a collection will be made of a limited number of local plants. Text-book, Bergen and Caldwell's *Practical Botany*. Assistant Professor Werkenthin.

Required of second year students in pre-college courses, except engineering, third term, 4 hours plus 2 hours practice.

COLLEGE COURSES.

Besides the required courses of college grade, electives are offered in the various lines of biology. All students electing work must have completed the prerequisites noted under the various courses.

Biol. 1, 3. *General Botany*. The purpose of this course is to give the student a general knowledge of the morphology, evolution, and classification of plants, the structure of cells and tissues, and the physiology of the seed plants. Representative types, in the plant kingdom, beginning with the simple forms, are studied to show the development of the plant body, the increase in specialization of the reproductive process, and the adaptation of plants to dry land conditions. This course is well adapted to the needs of the students of agriculture. Text-book, Bergen and Davis' *Principles of Botany*. Assistant Professor Werkenthin.

Required of all freshmen, excepting engineers, first and third term, 3 hours plus 4 hours laboratory.

Biol. 11, 12. *General Zoology*. Lecture, text, field and laboratory work, giving deeper consideration of biological principles, morphology, including general mammalian anatomy, and the ecologic and economic relations of animal life. Text-book, Osborn's *Economic Zoology*. Professor Merrill.

Required of all sophomores, excepting engineers, first and second term, 2 hours plus 4 hours laboratory.

Biol. 23. *Physiology*. Lectures and recitations on general physiology, based on human physiology and with sufficient reference to everyday hygiene. In the laboratory human anatomy will be studied from models, casts, charts, etc.; general histology will be studied from representative microscopic slides; and fundamental physiologic processes will be demonstrated by experiments and exercises. Text-book, Martin's *Human Body*. Professor Merrill.

Required of all sophomores, excepting engineers, third term, 3 hours plus 2 hours practice. Prerequisite, Biol. 11 and 12.

Biol. 32. *Bacteriology*. Lectures and laboratory work on the principles of sterilization and the technique of isolation, morphology, taxonomy, and physiology of bacteria. Special attention is given to the bacteriological analysis of water, milk and soils. Text-book, Buchanan's *Household Bacteriology*. Assistant Professor Werkenthin.

Required of juniors in agriculture and home economics, second term, 3 hours plus 4 hours laboratory. Prerequisite, Biol. 1 and 3.

Biol. 41. *Introductory Entomology*. Lectures, recitations, field and laboratory work giving a general knowledge of the structure and habits of the insects and their near allies. Laboratory work on the detailed study of the anatomy of the grasshopper, comparative study of other types, and the collection, pinning and classification of insects will give the student ample opportunity to acquaint himself with many phases of insect life. The economic side of the study will be touched upon. Text-book, Sanderson and Jackson's *Elementary Entomology*. Professor Merrill.

Required of juniors in agriculture, first term, 2 hours plus 4 hours laboratory. Prerequisite, Biol. 11 and 12.

Biol. 43. *Applied Entomology*. A continuation of Biol. 41. Further study of comparative types of structure, methods of preservation and preparation for study, and life history studies will be taken up. In addition, much time will be given to a study of the species affecting crops and live stock in New

Mexico. Methods for investigation and control of injurious species will be considered. Text-book, Sanderson's *Insect Pests of Farm, Garden, and Orchard*. Professor Merrill.

Required of juniors in agriculture, third term, 2 hours plus 4 hours laboratory. Prerequisite, Biol. 41.

Biol. 51. *Plant Histology*. This is primarily a laboratory course and is devoted to a consideration of methods in micro-technique, including killing, imbedding, section cutting, staining and mounting of plant tissues, and the use of camera lucida. The preparation of a series of permanent slides illustrating the microscopic structure of plants is a part of the required work. Text-book, Stevens' *Plant Anatomy*. Assistant Professor Werkenthin.

Required of juniors in agronomy and horticulture, first term, 2 hours plus 4 hours laboratory. Prerequisite, Biol. 1 and 3.

Biol. 53. *Plant Pathology*. A continuation of Biol. 51. Takes up the causes of the diseases of plants and methods of prevention or remedy. The laboratory work will deal largely with the more important diseases of economic plants caused by fungi and bacteria, including the study of symptoms, pathological anatomy, and life history of the causal organisms with the employment of culture methods. Text-book, Duggar's *Fungous Diseases of Plants*. Assistant Professor Werkenthin.

Required of juniors in agronomy and horticulture, third term, 3 hours plus 4 hours laboratory. Prerequisite, Biol. 51.

Biol. 61, 62, 63. *Ornithology*. A general course on habits, distribution, economic importance and taxonomy of the southwestern birds. Bailey's *Handbook of the Birds of the South-western United States* will be used for identification work. Professor Merrill.

Elective, hours to be arranged. Prerequisite, Biol. 11 and 12.

Biol. 71. *Plant Physiology*. This course will give a more detailed study of the physiology of plants, emphasis being laid upon the relation this study bears to scientific plant production. The laboratory work will consist of experimental study of phys-

iological processes of higher plants. Text-book, Duggar's *Plant Physiology*. Assistant Professor Werkenthin.

Elective, first term, 2 hours plus 4 hours laboratory. Prerequisite, Biol. 1 and 3.

Biol. 83. *Household Entomology*. This course will deal with the insects that more directly affect the home and mankind. Essentials of structure, habits and means of control will be studied. Text-book, Herrick's *Insects Injurious to the Household*. Professor Merrill.

Required of juniors in home economics, third term, 3 hours.

Biol. 91, 92, 93. *Systematic Zoology*. An advanced course giving opportunity for further study in the local fauna or in some definite group of animals. Professor Merrill.

Elective, hours to be arranged. Prerequisite, Biol. 11 and 12.

Biol. 101, 102, 103. *Systematic Botany*. An advanced course giving opportunity for further study in the local flora or in some definite group of plants. Assistant Professor Werkenthin.

Elective, hours to be arranged. Prerequisite, Biol. 1 and 3.

Thesis. Opportunity is given to students completing the requirements of biology to prepare theses along lines of selected or assigned problems for investigation.

GRADUATE WORK.

All electives not pursued in undergraduate courses will be accepted as minors for graduate work. For credit in major graduate work a student must do not less than 12 credit hours throughout the year.

EQUIPMENT.

The department of biology occupies five rooms on the second floor of Science Hall. One large room is used as a general laboratory for zoology, physiology and elementary botany. It is equipped with water and gas and contains a large number of prepared slides, models, casts, skeletons and preserved materials for laboratory work in the above subjects, as well as for

class demonstration. A model D Balopticon projection apparatus for lantern and microscopic slides, is used to supplement other forms of instruction. A second large room is used for botanical and bacteriological work, and for a research laboratory in pathological work. It is equipped with water, gas, tables, a wide assortment of apparatus, glassware and reagents of various kinds. A small greenhouse in connection with this room gives a few added facilities for work along these lines.

A third room is used for the herbarium. In it are upwards of 35,000 sheets of specimens representing approximately ninety per cent of the flora of New Mexico.

A fourth room contains the ornithological and entomological collections, the United States Geological Survey collection of rocks, several hundred fossils and casts, besides maps and charts, and common minerals that are used in instruction in geology. A small hall in connection with this is used as a sort of insectary.

The fifth room is used as an office for the department and contains the departmental library of over 500 volumes, besides a great many bulletins and pamphlets.

DEPARTMENT OF CHEMISTRY.

PROFESSOR HIGLEY.

ASSITANT PROFESSOR QUINTERO

MR. COOK

The lower courses in the department of chemistry give a general survey of the subject, and furnish the foundation for a practical application of its basic principles in engineering, agriculture and general science. Certain of the advanced courses have to do with the manufacturing industries, soils, fertilizers, and allied subjects.

Students desiring to pursue a four years' course in chemistry may do so by registering in the School of General Science and choosing their electives in the sophomore, junior and senior years from the courses listed below.

The instruction is given by means of lectures accompanied by demonstration experiments, recitations, and laboratory work.

SECONDARY COURSE.

Chem. 01, 02. *Elementary Chemistry*. A course for preparatory students. The work is based upon such texts as McPherson and Henderson's *First Course in Chemistry and Laboratory Exercises*.

Required of fourth year students in pre-college courses, except engineering, first and second term, 4 hours plus 2 hours laboratory.

COLLEGE COURSES.

Chem. 1, 2, 3. *General Chemistry*. A study of the principles of general chemistry as given in such texts as McPherson and Henderson's *Course in General Chemistry, and Laboratory Manual*.

Required of freshmen in all college courses, first, second, and third term, 3 hours plus 4 hours laboratory.

Chem. 11. *Organic Chemistry*. A general study of compounds of carbon as outlined in such texts as Stoddard's *Organic Chemistry*.

Required of sophomores in general science and agriculture, first term, 4 hours. Prerequisite, Chem. 3.

Chem. 12. *Advanced Organic Chemistry*. A general study of the compounds of carbon as outlined in such texts as Cohen's *Theoretical Organic Chemistry*, and Cohen's *Practical Chemistry*.

Required of sophomores in general science and agriculture, second term, 2 hours plus 4 hours laboratory. Prerequisite, Chem. 11.

Chem. 13. *Advanced Organic Chemistry*. A continuation of Chem. 12.

Elective for sophomores in general science, third term, 2 hours plus 4 hours laboratory. Prerequisite, Chem. 12.

Chem. 21, 22. *Household Chemistry*. This course is intended for students in home economics. It consists of lectures, recitations, and laboratory experiments in the chemistry of the household and of food and nutrition.

Required of sophomores in home economics, first and second term, 3 hours plus 2 hours laboratory. Prerequisite, Chem. 2 and 3.

Chem. 23. *Sanitary Chemistry*. This course takes up the more important practical problems in sanitary chemistry.

Required of sophomores in home economics, third term, 3 hours plus 2 hours laboratory. Prerequisite, Chem. 22 or 12.

Chem. 31, 32. *Quantitative Analysis*. This course gives a student training in the most important methods in the preparation of standard solutions and in volumetric and gravimetric determinations.

Required of students in general science whose major work is in chemistry, first and second term, 10 hours laboratory. Prerequisite, Chem. 3.

Chem. 41. *Qualitative Analysis*. A course in the qualitative analysis of the more difficult substances such as alloys, rocks, minerals, paints, and insoluble substances.

Required of students in general science whose major work is in chemistry, first term, 10 hours laboratory. Prerequisite, Chem. 3.

Chem. 53. *Agricultural Chemistry*. A general course in agricultural chemistry as outlined in such texts as Fraps'

Principles of Agricultural Chemistry, and Hedges and Bryant's *Laboratory Manual of Agricultural Chemistry*.

Required of sophomores in agriculture, third term, 2 hours plus 4 hours laboratory. Prerequisite, Chem. 12.

Chem. 51. *Advanced Agricultural Chemistry*. A continuation of Chem. 43 for those who wish to do more extensive work in the subject.

Elective for juniors and seniors whose major work is in chemistry, first term, 10 hours laboratory. Prerequisite, Chem. 43.

Chem. 61, 62, 63. *Assaying and Metallurgical Analysis*. A course for the accommodation of those students in general science who desire work in dry and wet assaying. The student is trained in the more important typical methods.

Elective for juniors and seniors in general science whose major work is in chemistry, first, second, and third term, 10 hours laboratory. Prerequisite, Chem. 41.

Chem. 71, 72, 73. *Industrial Chemistry*. This course is a study of the chemical principles involved in the manufacture of acids, alkalies, glass, cement, alcohol, vinegar, etc.

Elective for seniors in general science whose major work is in chemistry, first, second, and third term, 3 hours plus 4 hours laboratory. Prerequisite, Chem. 12 and 41.

Chem. 81. *Metallurgy*. This course is a study of the metallurgy of the common metals.

Elective, 3 hours. Prerequisite, Chem. 1, 2, 3.

Chem. 91. *Food Analysis*. This course involves the analysis and testing of foods. It is intended for such students as desire more extensive work than that given in this subject in connection with Chem. 21, 22, and 23.

Elective for juniors and seniors in general science, first term, 10 hours laboratory. Prerequisite, Chem. 31 and 41.

Chem. 111, 112, 113. *Research*. This is a laboratory course in thesis work. The student must arrange for the work with the instructor concerned.

Elective for seniors in general science whose major work is in chemistry, first, second, and third term. The laboratory work requires a minimum of four hours.

Not all electives will be given in any one year.

DEPARTMENT OF COMMERCE.

PROFESSOR HOOKLAND

MISS CARROON

The courses in the department of commerce are thorough and practical, each course being designed to meet a definite need in business training. The work is so arranged as to qualify students for ordinary work in business offices by the end of the first year, thus enabling them to take positions at that time should they so desire, and also to qualify them for other or higher courses in the department if they choose to continue their studies.

BOOKKEEPING COURSE

This is a one year course in bookkeeping and collateral branches. It meets the needs of those students who have no previous knowledge of bookkeeping, and who wish to prepare themselves for business positions. Before beginning this course, the student should have finished the eighth grade in our public schools, or its equivalent. Many young men and women, however, who have been deprived of this preparatory training, but who have been eager to learn, have made excellent progress, and have here got a start toward useful business careers. A certificate of credits will be given the student upon completion.

BOOKKEEPING AND ACCOUNTING COURSE

This course prepares students to fill the higher positions in business offices. More advanced subjects are introduced than in the first year's work in bookkeeping, and the subject of bookkeeping broadens into that of accountancy. It is a one-year's course. Upon completion of the work, students are entitled to a certificate of graduation.

SHORTHAND COURSE

This is a beginner's course in shorthand and typewriting and requires one year for completion. For efficient work, it is necessary that the student have a good knowledge of the English language, and that he, before entering the course, should have

completed the first year's work in high school, or its equivalent. Those who are deficient in English must arrange to take special work in that subject. No student will be allowed to enter the class in beginning shorthand except during the first week of the first and second terms. The course qualifies students to fill ordinary shorthand positions in business offices. A certificate of credits will be issued upon its completion.

SECRETARIAL COURSE.

To meet the needs of those who desire to prepare themselves for higher work as private secretaries or reporters we are offering a one-year's course in advanced stenography. Either English or Spanish stenography may be selected for this course. A working knowledge of shorthand is required as a prerequisite. The course aims, not only at speed in shorthand and typewriting, but also at a thorough familiarity with accounts, business papers, office appliances, and office routine. A certificate of graduation is granted upon completion.

BUSINESS TRAINING COURSE

It is the aim of our Business Training Course to qualify students thoroughly for all employments in the business office. The course therefore includes both shorthand and bookkeeping and all other strictly commercial branches that are essential to intelligent and efficient work. This is a three-year course, and consists of the Bookkeeping Course as the first year's work, the Shorthand Course as the second year's work, and an advanced course in both subjects as outlined on page 81 as the work of the third year. A diploma is awarded upon completion of this course.

BUSINESS TRAINING COURSE FOR HIGH SCHOOL GRADUATES

In order to enable high school graduates to take advantage of the instruction in business subjects given at the college without going over ground they have already covered, a two-year course has been arranged by the department. This course is in all essentials equivalent to the regular three-year Business Training Course. A diploma is awarded upon completion.

Com. 01, 02, 03. *Bookkeeping*. This is an elementary course in bookkeeping. The fundamental principles of debits and credits are first dwelt upon and applied to simple transactions. The work proceeds rapidly to more complicated transactions, which are entered upon books such as are ordinarily found in business offices. Business papers involved in these transactions are made out and handled by the student, who thus becomes familiar with their forms and uses. Ample practice is given in the making of trial balances, business and financial statements, balance sheets, cash proofs, etc. The work is largely individual, and each student is enabled to progress as rapidly as his abilities will permit. Professor Hookland.

Required of students in bookkeeping course, and first year students in business training course, first, second, and third term, 15 hours practice.

Com. 011. *Advanced Bookkeeping*. Particular attention is given in this course to the wholesale and commission business. The books used are up-to-date, and illustrate labor saving methods in accounting. Loose leaf and special column features are introduced, and controlling accounts used on the ledger. Practice is continued in making, trading and profit and loss statements and in the analysis of accounts. Professor Hookland.

Required of students in the bookkeeping and accounting course, third year students in business training course, and second year students in business training course for high school graduates, first term, 10 hours practice.

Com. 012. *Cost Accounting*. In this course, the student studies accounting methods adapted to the manufacturing business. Procedure in the matter of incorporation, and the use of corporation books, are discussed and fully illustrated. The laws governing corporation are also gone into, and a special study is made of the corporation laws of New Mexico. The leading feature of this course is the practice afforded in cost accounting. The subjects of prime cost, burden, overhead charges, factory

cost, selling expense, etc., are all given thorough treatment, and the various wage systems studied. Professor Hookland.

Required of students in the bookkeeping and accounting course, third year students in business training course, and second year students in business training course for high school graduates, second term, 1 hour plus 8 hours practice.

Com. 013. *Banking*. This course illustrates the operations of a modern national bank, and begins by outlining the steps necessary to be taken in its organization. The laboratory method is followed, and all ordinary papers are handled by the student, business transacted with out-of-town correspondents, clearances made, etc. Books upon which the transactions are to be entered are such as are in actual use in many of the leading banks throughout the country. Professor Hookland.

Required of students in the bookkeeping and accounting course, third year students in business training course, and second year students in business training course for high school graduates, third term, 6 hours practice.

Com. 021. *Business Organization*. A study is made of the various kinds of business organizations. Incorporated companies and their mode of organization receive careful attention. Chief stress is placed on internal organization, and organization of labor for efficient use. The internal organizations of some of the leading corporations are studied. Consideration is also given to the subject of finance. Professor Hookland.

Required of third year students in business training course, and second year students in business training course for high school graduates, first term, 5 hours.

Com. 022. *Accountancy*. This is a course in practical accounting and auditing, and requires a thorough knowledge of the principles of bookkeeping as a prerequisite. Problems such as confront the public accountant are submitted for solution. These are selected in part from various state examinations given to candidates for the degree of Certified Public Accountant, and are problems actually met with by accountants in the practice of their profession. Professor Hookland.

Required of third year students in business training course, and second year students in business training course for high school graduates, second term, 2 hours plus 6 hours practice.

Com. 023. *Farm Accounting*. A study of the factors involved in farm cost accounts. Various simple methods of keeping farm accounts and records are illustrated. Especial attention is given to methods of figuring production costs. Professor Hookland.

Required of students in bookkeeping and accounting course, and third year students in business training course, third term, 1 hour plus 4 hours practice.

Com. 0221, 0222, 0223. *Bookkeeping*. These courses are practically the same as Com. 01, 02, 03, but only 10 hours practice are required each week. Professor Hookland.

Required of students in secretarial course, and first year students in business training course for high school graduates, first, second, and third terms, 10 hours practice.

Com. 031, 032, 033. *Commercial Arithmetic*. The subject begins with the fundamental operations in numbers, and covers the entire range of business calculations. Short, practical methods are used, and sufficient drills are given to develop speed and accuracy in computations. Professor Hagerty.

Required of students in bookkeeping course and of first year students in business training course, first, second, and third terms, 5 hours.

Com. 051, 052. *Industrial Geography*. This is a study of the world's production and trade. Natural resources are located and studied in connection with other causes giving rise to industrial centers. The production and trade of each country are taken up and discussed in relation both to domestic and foreign commerce. National growth and expansion as far as these can be traced to industrial and commercial necessities and aims are taken under review. These courses aim, not only to give the student a knowledge of the world's industrial and trade activities, but also to enable him to use this knowledge in the solution of our economic problems. Professor Hookland.

Required of students in bookkeeping and accounting course, third year students in business training course, and second year students in business training course for high school graduates, first and second term, 5 hours.

Com. 053. *Commercial Law*. This course begins with a study of the essential elements of valid contracts. A detailed

study is made of the laws governing negotiable instruments, agency, partnership, corporations, sales, public service companies, insurance, and real estate transfers. Professor Hookland.

Required of students in bookkeeping and accounting course, third year students in business training course, and second year students in business training course for high school graduates, third term, 5 hours.

Com. 061, 062, 063. *Stenography*. This course constitutes one year's work in stenography. The work begins with the primary elements and leads gradually, but rapidly, to advanced practice and drill. After mastering the principles, simple phrases and word signs are given, the more complex forms and contractions being introduced gradually as the students are able to use them in the development of speed. A high grade of proficiency is required both in speed and accuracy. Miss Carroon.

Required of students in the shorthand course, second year students in business training course, and first year students in business training course for high school graduates, first, second, and third term, 10 hours.

Com. 0161, 0162, 0163. *Advanced Stenography*. A thorough review of principles, word signs, and phrases is given during the first term in these courses. This is followed by dictation exercises covering a wide range of matter, and speed drills. Verbatim reports of lectures and court proceedings are required. Miss Carroon.

Required of students in secretarial course, third year students in business training course, first, second and third terms, 5 hours; required of third year students in business training course, and second year students in business training course for high school graduates, first and second terms, 5 hours.

Com. 0261, 0262, 0263. *Spanish Stenography*. As a prerequisite Com. 061, 062, 063, and a working knowledge of the Spanish language are required. When the student becomes proficient in the application of shorthand principles to Spanish words, and has mastered the Spanish word signs and simple phrases, the time is given to speed drills. Ability to make cor-

rect verbatim reports of speeches, etc., is required. Miss Carroon.

Optional with students in secretarial course, third year students in business training course, and second year students in business training course for high school graduates, first, second, and third term, 5 hours.

Com. 071. *Business English*. This course is preliminary to office training and acquaints students with business terms, the different forms of business composition, and the essential rules for capitalization and punctuation. Practice is given to establish conceptions of proper tone and correct etiquette in business correspondence. Miss Carroon. Professor Hookland.

Required of students in shorthand course, and second year students in business training course, first term, 5 hours.

Com. 073. *Office Training*. This course familiarizes the student with office routine and the various appliances in use in business offices. Demonstrations are given in the use of filing systems, and practice is afforded in the operation of the multigraph, mimeograph, addressing machine, adding machine, copying press, billing machine, and filing devices. The student is also required to learn the mechanism of the typewriter, and how to take care of his machine. Miss Carroon.

Required of students in the shorthand course, second year students in the business training course, and second year students in business training course for high school graduates, third term, 2 hours plus 6 hours practice.

Com. 081, 082, 083. *Office Practice*. Assignments are made to stenographic work in various departments of the college. The student thus secures an actual experience in office work, and becomes used to taking dictation from different persons, which is a valuable asset when entering upon office work in business positions after graduation. Professor Hookland.

Required of students in secretarial course; first, second, and third terms, 10 hours practice; required of third year students taking English stenography in business training course, and second year students taking English stenography in business training course for high school graduates, third term, 10 hours practice.

Com. 091. *Parliamentary Practice*. The aim of this course is to furnish the students at the beginning of their work in the

department with a working knowledge of a few of the leading rules governing deliberative bodies. This knowledge together with the practice provided, it is hoped, will be of material aid in their relations with school organizations which will furnish means for further training along this line. Professor Hookland.

Required of students in bookkeeping course, and first year students in business training course, first term, 2 hours practice.

Com. 092. *Rapid Calculations.* Speed and accuracy in the fundamental operations in numbers are the two things sought in this course. Practice is also given in short cuts in various business calculations, and in proof methods. Professor Hookland.

Required of students in bookkeeping course, and first year students in business training course, second term, 2 hours practice.

Com. 093. *Correspondence.* Practice is given in this course in the arrangement, composition, punctuation, folding, etc., of business letters. Special attention is given to proper wording, tone of letters, and business etiquette as applied to correspondence. The principle of follow-up letters is discussed. Filing methods are illustrated. Professor Hookland.

Required of students in bookkeeping course, first year students in business training course, and first year students in business training course for high school graduates, third term, 2 hours practice.

Com. 0101, 0102, 0103. *Typewriting.* The touch system is used. The work in the first of these courses is elementary, the first lessons being devoted to a study of the keyboard, the correct position of the hand, and proper fingering. The work progresses rapidly from practice on simple words to sentence writing and to full page composition. Exercises are given in tabulation, and in neat businesslike arrangement of material. The last term is devoted largely to speed drills in copying written and printed material, writing direct from dictation and transcription of shorthand notes. Miss Carroon.

Required of students in shorthand course, second year students in business training course, and first year students in business training course for high school graduates; first, second, and third term, 10 hours practice; required of students in bookkeeping and accounting course, first term, 10 hours practice.

Com. 0111, 0112, 0113. *Typewriting*. This is an advanced course, and is devoted to speed drills. Miss Carroon.

Required of students in the secretarial course, first, second, and third term, 5 hours practice.

Com. 0201, 0202, 0203. *Typewriting*. This is an elementary course in this subject and has been arranged to accommodate those students who are not taking shorthand, but who desire training in typewriting. Miss Carroon.

Students who wish to take this work must first secure permission from the dean and make definite arrangement with the head of the department, first, second, and third term, 5 hours practice.

Com. 0122. *Spelling*. Drills are given in a wide range of words, but especial attention is given to ordinary and business terms. Lessons are assigned in definitions and the use of words in sentences. Miss Carroon.

Required of students in shorthand course, students in bookkeeping and accounting course, second year students in business training course, first year students in business training course for high school graduates, second term, 5 hours.

Com. 0131, 0132, 0133. *Penmanship*. It is necessary that bookkeepers should be able to write a neat, rapid, and legible hand. To acquire these qualities, requires a great deal of practice, and the use of a proper movement.

Required of students in bookkeeping course, and first year students in the business training course, first, second, and third terms, 3 hours practice; required of first year students in business training course for high school graduates, first term, 3 hours practice.

Com. 0143. *Salesmanship*. This is a study in the principles of salesmanship and effective advertising. It is a treatment of practical business psychology in relation to the solicitation of trade. Effective business methods, pulling qualities in advertising, winning personal traits, proper business etiquette, and many other subjects of interest to young people just starting on business careers are taken up and discussed. Professor Hookland.

Required of students in bookkeeping and accounting course, third year students in business training course, and second year students in business training course for high school graduates, third term, 4 hours practice.

EQUIPMENT

The department of commerce is equipped with up-to-date appliances. Our typewriting division is supplied with the latest model machines. For the work in office practice the students will have the use of filing cabinets, adding machines, addressing machines, multigraph, and other equipment. The college library, open to all students, contains the latest and best publications relating to the work of the courses in the department of commerce and the best business periodicals are at the command of the student.

DEPARTMENT OF ECONOMICS.

DEAN VAUGHAN

PROFESSOR FOX

Econ. 03. *Elementary Economics*. The purpose of this course is to give the student a knowledge of those human relations which have to do primarily with wealth, its production and distribution. The course will include also much material which might be classed under sociology, politics and ethics. The manner of treatment will be simple, concrete and practical.

Elective for fourth year students in pre-college courses, third term, 5 hours.

Econ. 1. *Principles of Economics*. A course planned to give students the working knowledge of basic economic principles necessary to fit them for subsequent specialized courses, to train teachers of economics for high schools, to train students for an intelligent study of public affairs and useful participation in them.

Required of juniors or seniors in college courses, first term, 5 hours.

Econ. 2. *Rural Sociology*. Rural population and its movements, social psychology of country life, rural institutions and organizations, the country school and church, means of communication, rural sports and recreation, birth rate and death rate, morality, standards of living, leadership, the organization of a rural community.

Required of juniors or seniors in teacher-training courses, second term, 3 hours.

Econ. 3. *Rural Economics*. An application of economic principles to the problems of rural life; systems of farming and land tenure, size of farms, co-operative buying and selling, co-operative credit, land credit, farm labor, immigration, taxation of farm lands, public land policies, conservation.

Required of juniors or seniors in teacher-training courses, third term, 3 hours.

DEPARTMENT OF ENGLISH.

PROFESSOR NEFF

MISS FOSTER

MISS FRENCH

The courses in the department of English are designed with two main purposes in view. They are intended, in the first place, to teach the student how to write and speak good English, and in the second place, to cultivate in his mind a taste for the best literature. These two purposes, it is believed, are in keeping with the needs of all students, regardless of the general course they are pursuing.

No student whose knowledge of spelling and grammar is deficient will be admitted to college classes in English, and the department reserves to itself the right to examine in English, should it deem it advisable, any student entering college classes in that subject.

SECONDARY COURSES

Eng. 01, 02, 03. *Composition and Literature*. A thorough drill in the elements of English composition, together with a study of the following classics: *The Merchant of Venice*, *The Deserted Village*, *Treasure Island*, and selections from *The Sketch Book*. Miss Foster.

Required of first year students in pre-college courses, first, second, and third term, 5 hours.

Eng. 011, 012, 013. *Composition and Literature*. Practice in oral and written composition. *Julius Caesar*, selections from American poets, *A Tale of Two Cities*, and Burrough's *Birds and Bees*. In connection with the readings from American poets a short history of American literature is studied. Miss Foster.

Required of second year students in pre-college courses, first, second, and third term, 5 hours.

Eng. 021, 022, 023. *Grammar and Literature*. Kittredge and Farley's *Advanced English Grammar*. *Macbeth*, *Idylls of*

the King, Silas Marner, and The Sir Roger De Coverly Papers. Miss Foster.

Required of third year students in pre-college courses, first, second, and third term, 5 hours.

Eng. 031, 032, 033. *General English Literature.* Newcomer and Andrews' *Anthology of English Literature.* A short history of English literature is studied. Some time is also given during the second term to bibliography and library practice. Professor Neff and Miss French.

Required of fourth year students in pre-college courses, first, second, and third term, 5 hours.

Eng. 041, 042, 043. *Special English for Spanish-American Students.* Intended primarily for Spanish-American students who are not yet sufficiently familiar with the English language to qualify for the regularly prescribed courses.

First, second, and third term, 5 hours.

Eng. 051, 052, 053. *English for Trades Students.* This is a thoroughly practical course in English, and is adapted as nearly as possible to meet the particular needs of students in the trades courses.

Required of first year trades students in automobile mechanics, first, second, and third term, three hours.

COLLEGE COURSES

Eng. 1, 2, 3. *Rhetoric and Composition.* In this course a systematic study is made of the fundamental principles underlying English composition, and a great deal of time is given to actual practice in theme-writing. Some time is also given during the second term to bibliography and library practice. Professor Neff, Miss Foster, and Miss French.

Required of freshmen in all college courses, first, second, and third term, 3 hours.

Eng. 11, 12, 13. *Advanced English Composition.* Themes, conferences, recitations, lectures. Professor Neff.

Required of sophomores in general science and home economics, and elective for juniors in agriculture, first, second, and third term; required of seniors in engineering, first and second term, 3 hours.

Eng. 21, 22, 23. *English Poets of the Nineteenth Century.* As much as possible of the poetry of the nineteenth century is read. Special attention is given to the most important works of Wordsworth, Coleridge, Bryon, Shelley, Keats, Tennyson, Browning, Rosetti, Arnold, and Swineburne. Professor Neff.

Required of juniors in general science and home economics, elective for others, first, second, and third term, 3 hours.

Eng. 31, 32, 33. *Shakespeare.* Class room study and interpretation of five or six selected plays, and extensive outside reading. Professor Neff.

Required of juniors in general science and home economics, elective for others, first, second, and third terms, 3 hours.

SUPPLEMENTARY READING

All students in English courses that are not elective will be required, in addition to their regular class room work, to read and make written reports on at least three books of standard fiction and one book of biography or essays. The object of this requirement is to get students to form the reading habit early, and to direct their reading in a judicious way.

DEPARTMENT OF GEOLOGY.

The work in geology is taught by lectures and recitations with prescribed text-book reading. Occasional field work is arranged for as often as circumstances will permit.

SECONDARY COURSES.

Geol. 03. *Physiography*. This course is intended to lay a foundation for the student's scientific training by considering the physical agencies at work on the earth. An important part of the course is observing the effects of soil-topography and climate on the distribution of plants and animals, and their relation to human industries. One double period per week is given to laboratory work or to field excursions.

Required of first year students in all pre-college courses, third term, 4 hours plus 2 hours practice.

COLLEGE COURSES.

Geol. 2. *General Geology*. This course includes dynamical, structural, and physiographical geology, considerable stress being laid upon rocks, rock-making minerals and their derivative soils. The required field trip will cost each student \$7.50.

Required of seniors in general science, agriculture, and civil and irrigation engineering, second term, 5 hours.

Geol. 3. *Historical Geology*. A detailed treatment of the history of the earth, together with some elementary work in paleontology.

Required of seniors in general science, third term, 5 hours.

Geol. 11. *Mineralogy*. This course is principally determinative mineralogy, but crystallography and descriptive mineralogy are also briefly studied.

Required of seniors in general science with major in chemistry, first term, 6 hours laboratory.

DEPARTMENT OF HISTORY.

DEAN VAUGHAN

SECONDARY COURSES.

Hist. 01, 02, 03. *General History*. A rapid survey of the leading nations of the world, from the dawn of recorded history down to the present time. Ancient history, medieval history, and modern history will be studied in the fall, winter, and spring terms, respectively.

Required of third year students in all pre-college courses, first, second, and third term, 5 hours.

Hist. 011, 012, 013. *American History and Government*. A comprehensive survey of British-American colonial history, the Revolution, the development of the United States, and a study of the organization and working of government under actual American conditions.

Required of fourth year students in all pre-college courses, first, second, and third term, 5 hours.

COLLEGE COURSES.

Hist. 1. *Modern Europe*. A rapid survey of European history from the beginning of the sixteenth century to the fall of Napoleon. The Reformation and the French Revolution are studied in some detail. Given in alternate years with History 11. (To be given in 1918-1919). Dean Vaughan.

Required of juniors or seniors in general science and home economics, 5 hours.

Hist. 2. *Modern Europe*. A course dealing with the history of Europe from 1815 to the present time. Special attention is given to the great reform movements of the century and to contemporary government and politics. Given in alternate years with History 12. (To be given in 1918-1919). Dean Vaughan.

Required of juniors or seniors in general science and home economics, second term, 5 hours.

Hist. 11. *American History to 1815*. A survey of the colonial beginnings of the United States, followed by an exhaustive study of the Revolution, the formation of the Union,

the organization of the government under Washington, the solution of the most pressing problems of the new nation at home and abroad, and the development of American political, social and economic institutions to the close of the War of 1812. Given in alternate years with History 1. (Not to be given in 1918-1919). Dean Vaughan.

Required of juniors or seniors in general science and home economics, first term, 5 hours.

Hist. 12. *American History since 1815*. Political, social, economic, and constitutional growth of the United States from 1815 to the present time. The rise of the West, slavery, and states' rights, division and reunion, reconstruction, the triumph of nationalism, labor movements, socialism, the Spanish War and imperialism, the United States a world power, the government of American dependencies. Given in alternate years with History 2. (Not to be given in 1918-1919). Dean Vaughan.

Required of juniors or seniors in general science and home economics, second term, 5 hours.

Hist. 13. *New Mexico History and Government*. A systematic study with text-books, assigned readings, and lectures. Dean Vaughan.

Elective, third term, 5 hours.

DEPARTMENT OF HOME ECONOMICS.

PROFESSOR MILLER

MISS THISSELL

The department of home economics provides instruction primarily in domestic art and domestic science. The course includes both scientific and cultural subjects; the aim being not only to train young women to be responsible home-makers, but also to lay a foundation for a general education that will develop capable women for whatever line of work they may choose to follow.

DOMESTIC ART.

MISS THISSELL

In the domestic art course the student makes a study of the different textile fibers and the processes used in the manufacture of the various fabrics. She also learns how to select materials wisely when buying. Instruction is given in hand and machine sewing, dressmaking and tailoring, millinery and art needlework. The furnishing of the home is considered from an economic and artistic standpoint.

Materials are furnished by the student.

SECONDARY COURSES.

H. E. 01, 02, 03. *Domestic Art.* A course covering in an elementary way the subjects outlined in the college courses.

Elective for second year pre-home economics students, first, second, and third term, 2 hours plus 6 hours practice.

COLLEGE COURSES.

H. E. 1. *Sewing I.* This course covers the various stitches in hand sewing, and the use of the sewing machine. The stitches are applied in making of a cooking uniform, a sewing apron, and a lingerie waist. Lessons are also given in mending, darning and patching.

Required of freshmen in home economics, first term, 2 hours plus 6 hours practice.

H. E. 3. *Sewing II*. This course is a continuation of H. E. 1. A complete set of underwear is finished and the remaining time given to the making of simple dresses.

Required of sophomores in home economics, third term, 2 hours plus 6 hours practice. Prerequisite, H. E. 1.

H. E. 12. *Dressmaking and Tailoring*. Instruction is given in the principles of garment making, taking measurements, cutting and fitting. This course includes the making of a tailored gown, also an afternoon or party dress.

Required of seniors in home economics, second term, 1 hour plus 8 hours practice. Prerequisite, H. E. 1 and 3.

H. E. 13. *Millinery*. The practical construction of hats of typical kinds, and their trimming for all seasons.

Required of juniors in home economics, third term, 8 hours practice. Prerequisite, H. E. 1 and 3.

H. E. 21. *House Decoration*. A practical course in the decoration and furnishing of the entire home. The problem of artistic and economic furnishing and the cost of materials are considered. Work in simple embroidery is included in this course.

Required of seniors in home economics, first term, 3 hours plus 4 hours practice. Prerequisite, H. E. 1 and 3.

H. E. 22. *Basketry*. Practical work in basket weaving, using both the reed and raffia.

Required of seniors in home economics, second term, 4 hours practice.

H. E. 33. *Textiles*. This course covers the study of fibers and materials, their history and manufacture. The laboratory work includes the proper use of reagents in relation to the dyeing and cleaning of fabrics.

Required of seniors in home economics, third term, 2 hours plus 2 hours practice. Prerequisite, Chem. 23.

DOMESTIC SCIENCE.

PROFESSOR MILLER

Domestic science is a subject which places the home and every phase of housekeeping upon a scientific basis. Founda-

tion studies, as physics and chemistry, bacteriology and physiology, are correlated throughout the course and applied directly to the principles of cookery, dietetics, home nursing, household management and sanitation.

SECONDARY COURSES.

H. E. 011, 012, 013. *Domestic Science*. This course is an elementary study of foods and the underlying principles of cookery and home problems.

Elective for third year pre-home economics students, first, second, and third term, 2 hours plus 6 hours practice.

COLLEGE COURSES.

H. E. 42. *Foods I*. This course includes a study of foods in regard to their classification, composition, and the effect of heat as applied to the different foodstuffs. The laboratory work provides for the preparation of simple dishes to illustrate each principle, as beverages, vegetables, cereals, fruits, eggs, milk, cheese, meat, baking powder mixtures and bread.

Required of freshmen in home economics, second term, 2 hours plus 6 hours practice.

H. E. 51. *Foods II*. The class work in this course is a continuation of H. E. 42. The laboratory work includes the preparation of fancy breads, salads, cakes, pastries and the preservation of foods.

Required of sophomores in home economics, first term, 2 hours plus 6 hours practice.

H. E. 52. *Foods III. Advanced Cookery*. This course applies particularly to the study of foods in regard to manufacture, production and economic value. The laboratory work includes the application of the principles involved in the preceding courses and the preparation of dishes requiring further skill in manipulation.

Required of sophomores in home economics, second term, 2 hours plus 4 hours practice. Prerequisite, H. E. 42 and 51.

H. E. 63. *Dietetics I.* This course includes a study of the fundamental principles of human nutrition. Foods are considered as to chemical composition, physiological properties, and their value as nutritive agents. Diets are planned to meet the requirements of individuals under different physiological and economic conditions.

Required of juniors in home economics, third term, 2 hours plus 4 hours practice. Prerequisite, H. E. 52.

H. E. 71. *Dietetics II.* This course is a continuation of H. E. 63. Special attention is given to the preparation of food suitable for the patient and the relation of certain foods to particular diets and diseases.

Required of seniors in home economics, first term, 1 hour plus 2 hours practice.

H. E. 72. *Marketing and Serving.* This course gives an opportunity to apply in a practical way the preceding courses in foods. Menus are planned, supplies purchased and costs estimated. The meals are prepared and served to groups of the average family size.

Required of seniors in home economics, second term, 1 hour plus 4 hours practice. Prerequisite, H. E. 63.

H. E. 73. *Household Management.* In this course plans for the organization of the household and the general management of the home are presented. Also, the following subjects are considered: the household budget, household accounts, household service, and the furnishing of the home from the working standpoint.

Required of seniors in home economics, third term, 3 hours.

H. E. 81. *Home Nursing.* This course includes practical nursing in the home, the furnishing and care of the sick room, the care of the patient, and lessons in first aid.

Required of seniors in home economics, first term, 3 hours.

H. E. 83. *Household Sanitation.* In this course, sanitation is emphasized, not only in relation to the house itself, but to the neighborhood and community. The situation, surroundings,

and construction of the house are studied; also the ventilation, water supply and drainage and the disposal of garbage.

Required of seniors in home economics, third term, 2 hours.

The Teaching of Home Economics. (See Department of Vocational Education, Courses 22 and 23.) A course for the training of high school teachers of home economics.

DEPARTMENT OF MATHEMATICS AND ASTRONOMY.

PROFESSOR HAGERTY

MRS. WINNINGHAM

Since the work of this institution is largely technical in its character, considerable attention is given to the utility phase of mathematical subjects, but the cultural phase is by no means lost sight of. Astronomy is taught almost wholly for its cultural value.

SECONDARY COURSES

Math. 01, 02, 03. *Elementary Algebra*. The connection of algebra with arithmetic is kept constantly before the student, and the solution of an unusually large number of practical problems constitutes the main part of the work, since the purely theoretical side of the subject receives full consideration later in the advanced algebra. The text-book completed is Slaughter and Lennes' *Elementary Algebra*. Mrs. Winningham.

Required of first year students in pre-college courses, first, second, and third term, 5 hours.

Math. 011, 012, 013. *Plane Geometry*. In this course Wentworth's *Plane Geometry* is completed, including about five hundred of the original exercises. Mrs. Winningham.

Required of second year students in pre-college courses, first, second, and third term, 5 hours.

Math. 021. *Higher Arithmetic*. This course consists of a general review, and a consideration of topics not previously studied. The applied problems are of a practical nature, referring largely to questions arising in the laboratory and in ordinary commercial life. Lyman's *Advanced Arithmetic* is the text-book used. Professor Hagerty.

Required of fourth year pre-general science and pre-engineering students, first term, 7 hours.

Math. 022. *Solid Geometry*. In this course Wentworth's *Solid Geometry* is completed, including many of the original exercises. Professor Hagerty.

Required of fourth year pre-general science and pre-engineering students, second term, 7 hours.

Math. 023. *Advanced Algebra*. This course includes a review and a more complete treatment of all topics of the first year course in algebra, and special emphasis is given the following: involution, evolution, quadratic equations, radicals, imaginary and complex numbers, ratio, proportion, variation, and theory of exponents, including logarithms. The text-book used is Slaughter and Lennes' *Intermediate Algebra*. Professor Hagerty.

Required of fourth year pre-general science and pre-engineering students, third term, 7 hours.

COLLEGE COURSES.

Math. 1. *Plane Trigonometry*. In this course both the theoretical and practical phases receive careful consideration. Many formulas are developed and the applications cover a wide field, including problems in heights, distances, surveying, physics and astronomy. Professor Hagerty.

Required of freshmen in general science and engineering, first term, 5 hours.

Math. 2. *College Algebra*. This course includes a review of quadratics and complex numbers and covers the following subjects; progressions, inequalities, undetermined coefficients, indeterminate equations, the binomial theorem for all rational exponents, permutations and combinations, variables and limits, series, and the elements of the theory of equations. Professor Hagerty.

Required of freshmen in general science and engineering, second term, 5 hours.

Math. 3. *Plane Analytic Geometry*. Study in detail of the following subjects is made. Straight line, circle, transformation of coordinates, parabola, ellipse, hyperbola, general equations of the second degree, and a few of the higher plane curves, using both rectangular and polar coordinates. Professor Hagerty.

Required of freshmen in general science and engineering, third term, 5 hours.

Math. 12. *Solid Analytic Geometry*. The following subjects are studied: coordinates in space, loci and their equations, plane and straight line, quadric surfaces, a few space curves, tangent lines and planes. Professor Hagerty.

Required of sophomores in engineering, second term, 1 hour.

Math. 31, 32, 33. *Differential and Integral Calculus*. The topics treated in this course are those usually taken up in accordance with well established usage. Many practical problems in analytic geometry and mechanics are solved by the students in order to fix the principles in their minds and to maintain their interest. Campbell's *Differential and Integral Calculus* is the text-book used. Professor Hagerty.

Required of sophomores in engineering, first term, 5 hours, second term, 4 hours, third term, 5 hours.

Math. 42. *Spherical Trigonometry*. This course covers the proof of the fundamental formulas of right and oblique triangles and applications. Professor Hagerty.

Elective, second term, 1 hour. Prerequisite, Math. 1.

ASTRONOMY.

Astron. 3. *General Astronomy*. In this course are studied not only astronomical facts and principles, but also the methods by which the facts have been ascertained. The work is conducted by lectures, recitations, and solar and night observations. The determination of the meridian, latitude, and longitude are among the practical problems assigned, and by means of the instruments at the disposal of the students quite accurate results are obtained. Young's *Manual of Astronomy* is the text-book used. Professor Hagerty.

Required of juniors in general science, third term, 5 hours.

EQUIPMENT.

This department has a 6-inch portable, equatorially mounted refracting telescope, a transit theodolite having an 8-inch horizontal circle reading to 10 inches and a 6-inch vertical circle reading to 30 inches, an 18-inch celestial globe, a Bausch and Lomb-Zeiss stereobinocular magnifying 7 1-2 diameters, two

star lanterns with slides, star atlases, planisphere, 18-inch slated globe, a set of stereoscopic views of the figures for the theorems in solid geometry, the Ross mensuration blocks and dissected geometrical solids, a Thatcher's calculating instrument, protractors, etc.

The department library contains many valuable books of reference, and receives several periodicals.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

PROFESSOR WALLEN.

The military department is conducted with two objects in view. The first is to fit male students of the College to render efficient military service to the country in time of need. Those who have completed the entire course satisfactorily are prepared, so far as education and peace training can prepare them, for service as commissioned officers. The second is to equip the student for success in any walk in life by inculcating habits of discipline, and of obedience to and respect for proper authority.

The results of pursuing these objects earnestly are so obviously of benefit to the country—whether in war or in peace—as well as to the student, that the United States Government gives the department as liberal a degree of aid as is consistent with the needs of the general military establishment. Consequently the department is conducted practically without expense to either the College or the student. It only remains to be said that our government expects and requires that the students receiving the advantages of this department obey loyally and without question the lawful orders of their military superiors during their continuance in the department and that they display that degree of honorable conduct in their relations thereto which has always been the distinguishing mark of the true soldier.

The professor is an officer of the regular army detailed for this duty by the President of the United States, and the equipment—of the value of about \$5,000—is issued to the College by the War Department.

The military course is required to be taken by all physically qualified male students in the institution, except juniors, seniors, and graduate students. These latter classes may, and practically without exception do, avail themselves of the instruction and opportunities afforded by it.

Organization. The department consists of a regularly organized unit of the Reserve Officers' Training Corps, Senior

Division, to which all physically fit male students over fourteen years of age and citizens of the United States are eligible (provided that they are registered in a course which involves two years attendance at the College for its completion), and of other students receiving instruction who are not qualified for membership of the unit. Its scope of instruction complies with the regulations of the War Department governing the training of the R. O. T. C. Units, Senior Division, and these are so thorough and comprehensive that a student who has satisfactorily completed the course is presumed to be qualified to assume the duties of a second lieutenant in the United States Army.

Allowance of, or commutation for, uniform is given to all members of the unit by the United States Government, and commutation of subsistence at the rate of thirty cents per diem (under existing regulations) is paid to all members pursuing the advanced course, namely the final two years of the prescribed instruction. Freshmen or sophomores may enter the advanced course if otherwise eligible. In addition attendance at two training camps without expense to the student is provided by the government in the case of those who have contracted to pursue the advanced course. Other students may be allowed to attend these training camps without expense to themselves but are not required to do so. It may be of interest to those not acquainted with the work done at these training camps—which are held at some suitable time and place during four weeks of the summer vacation—to learn that competent and impartial observers agree that there is no other way in which a young man could spend an equal period of time with results as valuable to himself. It appears scarcely necessary to state such training makes the young man more valuable to the country in a military sense.

In brief, the military department offers to the intelligent and interested student military education and training for pursuing which he receives (if he takes the entire four years' course) about two hundred dollars over and above any personal

expense involved and which far exceeds in thoroughness and scope the training formerly given at many of the most expensive and widely advertised military academies. On the other hand, this training, with all its advantages, involves no obligation on the part of the student other than the moral obligation to use his abilities for the furtherance of his country's interests. The student who has received this training has not thereby bound himself to accept a commission in the National Service—still less to serve therein as an enlisted soldier. He has acquired the ability to serve his Country as a commissioned officer while still retaining entire freedom of choice as to what his future occupation shall be.

From a physical standpoint this department offers a positive agency through which the entire number of male students of the College are assured of obtaining the minimum degree of exercise necessary for healthy and normal development. The drills and exercises insure that all, whether physically indolent or otherwise, will secure sufficient exercise to maintain normal health and develop a manly and erect bearing. On the contrary, these drills are neither severe nor protracted enough to injure the less physically fit.

An annual encampment of about one week's duration, which all students in the department are required to attend, is a part of the regime of the College. Gallery and target practice are also annually conducted.

Uniform. Each student classified for the military course is required to deposit with the Accountant at the time of registration the price of the adopted uniform; but \$14.00 is subsequently refunded to each member of the R. O. T. C. Unit taking the basic course (i. e., the first two years' training), and \$23.79 is refunded to each member of the advanced course in case the student in question has drawn uniform articles of that total value. These amounts are respectively somewhat less and somewhat more than the present cost of the uniforms required at the college. The increased amount of uniform allowed mem-

bers of the advanced course is allotted with a view to provide them with uniform for wear at the training camps mentioned. Tan shoes are required for wear when in uniform.

The uniform must be worn by all students in the military department on regular school days and at such other times as may be directed. It must be worn at all times precisely as required in orders of the department. It may be worn by other students of the college under the following restrictions: no student not in the R. O. T. C. Unit shall wear at any time or place any insignia or distinctive badge of the Unit and all who wear the uniform shall be subject to the orders regarding it as published by this department.

Official action will be taken in regard to any student in uniform whose conduct is of a nature to reflect discredit upon the Unit which the offender represents.

The administration of strict discipline and impartial justice by this department with a view to suppressing undesirable traits in its members by no means implies that it looks no further towards the formation of character. The department's function of searching out and developing the desirable qualities of its individual members will receive at all times the carefulest consideration.

DEPARTMENT OF MODERN LANGUAGES.

PROFESSOR HOBLIT.

The aim in the work of the department of modern languages is to ground the student in the essentials of these languages with a view to their practical use in reading and speaking.

SECONDARY COURSES.

Span. 01, 02, 03. *Beginning Spanish.* Grammar and easy reading. Particular attention is given to the fundamentals of grammar and to correct pronunciation. Simple exercises in writing and speaking are introduced as auxiliary to the main purpose of the course.

Required of third year students in pre-college courses, first, second, and third term, 5 hours.

Span. 011, 012, 013. *Second Year Spanish.* More difficult selections for reading from modern prose writers and miscellaneous sources. Translation, grammar review, composition, and easy conversation upon topics suggested by the readings.

Required of fourth year students in pre-college courses, first, second, and third term, 5 hours.

COLLEGE COURSES.

Span. 1, 2, 3. *Elementary Spanish.* This course covers practically the same work as Span. 01, 02, 03, only in a more thorough way. It is intended for more advanced students.

Required of freshmen in all college courses, who do not elect Fr. 1, 2, 3, first, second, and third term, 4 hours.

Span. 11, 12, 13. *Spanish Readings.* This course covers practically the same work as Span. 011, 012, 013, only in a more thorough way. It is intended for more advanced students.

Required of sophomores in general science and home economics, who do not elect Fr. 11, 12, 13, first, second, and third term, 3 hours.

Fr. 1, 2, 3. *Elementary French.* A course similar in plan to Span. 1, 2, 3. Students who offer Spanish for entrance will

take this course in French; others may choose between French and Spanish.

Required of freshmen in all college courses, who do not elect Span. 1, 2, 3, first, second, and third term, 4 hours.

Fr. 11, 12, 13. *French Readings*. Similar in plan to Span.

11, 12, 13. Readings, composition, grammar review.

Required of sophomores in general science and home economics, who do not elect Span. 11, 12, 13, first, second, and third term, 3 hours.

DEPARTMENT OF MUSIC.

MISS WOOD.

The work of the music department includes classes in theory, harmony, and history of music, boys' glee club, girls' glee club, mixed chorus, orchestra, band, and private lessons in piano, voice and violin.

Boys' Glee Club.—Open to all boys who sing. Meets once a week to work on unison, two, three and four-part songs. Supplemented by elementary notation and ear-training.

Girls' Glee Club.—Open to all girls with acceptable voices. Meets once a week. Supplemented by elementary notation and ear-training.

Mixed Chorus.—Open to all students.

Quartettes.—Quartettes, trios, etc., are selected from among the more advanced students and those having the best voices, to work on the more difficult music.

Orchestra.—Meets on Monday and Thursday evenings. Open to students who play orchestral instruments. Beginners are coached privately until their playing warrants admission. All piano students are given opportunity for some work in the orchestra.

Military Band.—Meets daily. In charge of a competent leader, who gives careful instruction to members needing extra instruction.

Piano.—One lesson a week is free to regular students who practice not less than one hour daily. A practice fee of \$2.50 a term is charged piano students who use college pianos.

Classes are formed in theory, harmony, music history, public school music, and sight singing, when a sufficient number of students desire instruction in these branches of study.

DEPARTMENT OF PHYSICAL EDUCATION.**PROFESSOR GRIFFITH.**

The department of physical education aims to create and maintain a vigorous state of health in every student in the college. It is part of an institution that believes in the old adage, "A sound mind in a sound body." Its work is as diversified as the needs of the individual student.

Students of whom physical training is required must present themselves at the director's office in the men's gymnasium on the first day of the term, to arrange for the regular medical and physical examination and for the assignment of hours for physical instruction. A thorough physical and medical examination is given. This examination consists of measurements, strength tests, examination of eyes, ears, nose, throat, lungs, heart and other vital organs. Special attention is given to physical deformities and inequalities. These defects are pointed out to the student, and exercises to correct them are presented.

Physical education is required 3 hours a week of all students not taking military drill, except juniors, seniors, and graduate students.

The men's gymnasium is a large, well lighted room, 40x60 feet in size, and contains the necessary apparatus for gymnasium work of all kinds. In connection with the gymnasium is a large locker room, with steel lockers, and a well equipped shower room, with six showers for hot and cold baths.

An athletic field for football, baseball, and track and field athletics is provided by the College and maintained by the Athletic association. Students are encouraged to take part in athletic and outdoor games. Athletics is a part of the physical training work, but participation in this phase of the work is optional. No student is allowed to become a member of any team until he has been examined by the director and proven physically fit.

Teams are now maintained in football, baseball, basket-ball, track and field athletics, and the College gives letters to those complying with requirements.

DEPARTMENT OF PHYSICS.

The courses in physics are designed with the idea of clearly presenting to the student those fundamental laws of nature which form the foundation of all science. This is accomplished by means of texts, lectures, recitations, laboratory exercises, and problems, arranged to cultivate in the student his power of observation of and reasoning about the ways of nature.

SECONDARY COURSES

Phys. 01, 02. *Elementary Physics*. Introductory principles of mechanics, heat, sound and light, as outlined in Millikan and Gale's *First Course in Physics*. A list of laboratory experiments correlated with the text, is completed by each student.

Required of third year pre-engineering students, first and second term, 4 hours plus 2 hours laboratory.

Phys. 03. *Practical Electricity*. This course, which is a continuation of Phys. 01, 02, deals in an elementary way with the laws of electricity.

Required of third year pre-engineering students, third term, 4 hours plus 2 hours laboratory.

COLLEGE COURSES.

Phys. 1, 2, 3. *College Physics*. Lectures, recitations and assigned problems in mechanics, heat, light, sound and electricity. This course contains a technical treatment of the subject and is particularly designed to meet the needs of students of engineering. Text, Anderson's *Physics for Technical Students*. Laboratory exercises are selected from Millikan and Jamison's manuals.

Required of sophomores in general science and engineering, elective for others, first, second, and third term, 3 hours plus 4 hours laboratory.

Phys. 11. *Agricultural Physics*. This course is designed to meet the need of agricultural students. It treats of the simpler machines, of the mechanics of gases in connection with weather phenomena, and of liquids in capillarity and osmosis.

The fundamental ideas of force, work and power are developed with reference to the various appliances used on the farm. Text, Black and Davis' *Practical Physics*.

Required of freshmen in agriculture, first term, 3 hours plus 2 hours laboratory.

Phys. 21. *Household Physics*. A course of lectures and demonstrations in which the principles involved in appliances of the household are explained and illustrated. The work in light includes a study of illumination, the use of optical instruments, and a brief treatment of photography. Text, Lynde's *Physics of the Household*.

Required of juniors in home economics, first term, 2 hours plus 4 hours laboratory.

EQUIPMENT.

The department occupies a lecture room, office and laboratory on the first floor of the new engineering building. With this arrangement the attention of the students is immediately directed from the theoretical study to the practical application in the department of engineering.

The laboratories are fully equipped with apparatus for experiments indicated in the various courses and in addition there is material for advanced work for those who elect it.

DEPARTMENT OF VOCATIONAL EDUCATION.

DEAN VAUGHAN

ACTING PROFESSOR MCARTHUR

V. E. 1. *General Psychology*. A scientific outline of the basic facts and principles of psychology for mature students; designed to lay the foundation for specialized work in psychology and to enable the student to understand himself and his own mental processes. Acting Professor McArthur.

Required of juniors in all college courses except agriculture and engineering, first term, 5 hours.

V. E. 2a. *Educational Psychology*. A course dealing with those aspects of psychology which have a direct bearing on the learning process; the instincts, their development and modification; the influence of heredity; habit, imitation, and suggestion; memory, imagination, reasoning, development of initiative. Experimental results in this field receive careful attention. Acting Professor McArthur.

Required of juniors in all teacher-training courses, first half of second term, 5 hours. Prerequisite, V. E. 1.

V. E. 2b. *Principles of Education*. A study of the problems and principles of education; development and formulation of the most fundamental principles of sound and effective teaching; the aims of education, discipline, questioning, lesson plans, examinations. Acting Professor McArthur.

Required of juniors in all teacher-training courses, second half of second term, 5 hours.

V. E. 3. *Rural Education*. A course dealing with the basic principles of education applied to the actual conditions of the rural school, rural school organization and consolidation; school gardens, the organization and teaching of agriculture, manual training, and home economics in rural and village schools; the rural school as a center of community life; buildings and equipment; playgrounds and their supervision; music and rural school entertainments. Acting Professor McArthur.

Required of juniors in all teacher-training courses, third term, 5 hours.

V. E. 11. *History and Theory of Vocational Education.*

The first part of this course is devoted to the study of the origin and development of vocational education in the United States and foreign countries. The second part aims to investigate the theory and develop the basic principles underlying such training. Acting Professor McArthur.

Required in all teacher-training courses, senior year, first term, 3 hours.

V. E. 12, 13. *The Teaching of Agriculture.* The place of agriculture in the curriculum; organization of the course in agriculture; application of the principles of teaching to instruction in agriculture, importance of experiments, demonstrations, and field trips; the relation of agriculture to other subjects in the high school; the selection of material and its seasonal arrangement. Acting Professor McArthur.

Required of seniors in training courses for teachers of agriculture, second and third term, 3 hours.

V. E. 22, 23. *The Teaching of Home Economics.* This course aims to familiarize the student with the best thought on the planning and organization of the course in home economics and the best practice in teaching it. Attention will be given to planning and securing equipment, making lesson plans, correlating home economics with the other work of the school, and adaptation of the subject matter to different types of schools and to varying local conditions. Professor Miller and Miss Thissell.

Required of seniors in training courses for teachers of home economics, second and third term, 3 hours.

V. E. 33. *History and Organization of Extension Work.*

The recent rapid development of extension work in agriculture and home economics throughout the country is taxing the resources of our educational institutions to find properly equipped men and women for the service. The object of this course is to train mature students to become rural leaders in this line of work. The work of the course will begin with a brief resume of the history of extension work in this country, to be followed by a study of the federal legislation regulating and financing it.

The latter part of the course aims to familiarize the student with the most approved methods of organizing and carrying on the work. Dean Vaughan.

Elective for seniors, third term, 3 hours.

LIST OF STUDENTS

1917-1918

Graduate

Vickers, Gates Sterling Deming, N. M.

Seniors

Anderson, Edna Eleanor Long Beach, Cal.
Buvens, Margaret Smart Mesilla Park, N. M.
Cormany, Charles Evans Las Cruces, N. M.
Gardner, William Ansel Carrizozo, N. M.
Garrett, Chester Portales, N. M.
Rentfrow, Bendette Martina Mesilla Park, N. M.
Sinnock, William Pike Las Cruces, N. M.
Woodson, Corinne Lee Las Cruces, N. M.

Juniors

Campbell, Lawrence Clifford Fort Davis, Texas
Carson, Harry Ernest Hope, N. M.
Foster, Robert Geib Raton, N. M.
Hale, Hugh Douglas Lexington, N. C.
Herbert, Guy Hammond Roswell, N. M.
Kinsell, Dillman Condon Santa Fe, N. M.
Ledford, Bessie James Mesilla Park, N. M.
Ousterhout, Lawrence Sherburn Hondale, N. M.
Rea, Joyce Kitty Riddle, N. M.
Rentfrow, Era Hall Mesilla Park, N. M.
Smith, Howell Allie State College, N. M.
Stewart, Alice Eva Mesilla Park, N. M.
Stuart, Esther Irene Mesilla Park, N. M.
Williams, Jesse Caleb Fort Stockton, Texas

Sophomores

Bean, Roy Paul Las Cruces, N. M.
Boan, Ruth Harriet Raton, N. M.
Foster, Bennett William Las Cruces, N. M.
Goebel, Dorothy Tyrone, N. M.
Hagerty, Marty Elizabeth State College, N. M.
Hollinger, Martha Elma Union City, Ind.
Howarth, Anna Raton, N. M.
Howarth, Barbara Raton, N. M.
McGary, Osie Rolland Roswell, N. M.
Nichols, Alva Las Cruces, N. M.
Osuna, Pedro Albuquerque, N. M.
Quesenberry, Florence Broadus Las Cruces, N. M.
Robbins, John Cyril, Jr. Mesilla Park, N. M.
Thaxton, Robert Clifton Mesilla Park, N. M.
Worcester, Richard Leonard El Paso, Texas

Freshmen

Bacon, Wallace Winn	Albuquerque, N. M.
Blazer, Noel Edison	Mescalero, N. M.
Brownlee, Howard Reed	Las Cruces, N. M.
Buell, Arthur Warren	Mesilla Park, N. M.
Butler, Bishop Ormand	Raton, N. M.
Conway, Harry Ramsey	Mesilla Park, N. M.
Elwood, Robert, Jr.	Las Cruces, N. M.
Hare, Clifford Nelson	Las Cruces, N. M.
Hedgcoxe, Weaver Oliver	Roswell, N. M.
Hines, Gladys Marie	Mesilla, N. M.
Hoagland, Lyman Edward	Las Cruces, N. M.
Jones, Irene Katherine	Las Cruces, N. M.
Leaming, Maurice Paul	French, N. M.
Mandell, Humbolt Casad	Mesilla Park, N. M.
Mentzer, Carlton Argo	Carrizozo, N. M.
O'Hara, Alda Margaret	Las Cruces, N. M.
O'Hara, Charles Francis	Las Cruces, N. M.
Phelps, Elsa Frances	State College, N. M.
Robbins, Leon Alexander	Deming, N. M.
Robertson, Roy Robbie	Gunsight, Texas
Trujillo, Melecio	Albuquerque, N. M.
Tweed, John Samuel	Alamogordo, N. M.
White, Elza, Jr.	Roswell, N. M.
Will, Ralph Reeves	Las Cruces, N. M.
Wimberly, Frank Edward	Hagerman, N. M.
Young, Robert Andrew	Dexter, N. M.

College Special

Kloss, Mrs. C. L.	Webster Groves, Mo.
Lohman, Oliver	Las Cruces, N. M.
Roper, Eugenia	Allamore, Texas
Turney, Gertrude Mary	Mesilla Park, N. M.

Pre-Agricultural

Barnhill, Winston Oliver	El Reno, Okla.
Buell, Walter Ernest	Mesilla Park, N. M.
Costa, Dominic Jim	Madrid, N. M.
Davy, David Jobson	Hatch, N. M.
DeVaney, Ray	Progreso, N. M.
Edwards, Shelby	Santa Rita, N. M.
Ellis, Dudley	Las Cruces, N. M.
Evans, John Mulford	Mesilla Park, N. M.
Floyd, Fred	Bell, N. M.
Ford, Paul	Las Cruces, N. M.
Ford, Richard	Las Cruces, N. M.
Hardin, Millard Charles	Lordsburg, N. M.
Harris, John Alexander	Mesilla Park, N. M.
Hughes, Glenwood Manly	Mogollon, N. M.
Johnson, Henry Patrick	Deming, N. M.
Kull, Winthrop William	La Mesa, N. M.
Lark, William	Sugarite, N. M.

Leger, Jose Santos.....	Las Vegas, N. M.
McDowell, Lawrence	Mesilla Park, N. M.
Miller, Raleigh Lorenzo.....	Mesilla Park, N. M.
Montoya, Isaac	Cherryvale, N. M.
Morrison, Walter Glen	High Rolls, N. M.
Pacheco, Antonio	Sapello, N. M.
Pacheco, Teodosio Montoya.....	Sapello, N. M.
Parker, Roland Traller.....	Hachita, N. M.
Pena, Felipe P.....	East Las Vegas, N. M.
Rhodes, Isaac, Jr.	Hill, N. M.
Robeson, Stewart Henry.....	Organ, N. M.
Romero, Benito	Trujillo, N. M.
Severns, Frank Clarence.....	Belen, N. M.
Tinoco, Ignacio	El Paso, Texas
Wright, Arthur Glen.....	Arrey, N. M.

Pre-Engineering

Bentley, Charles Finch.....	Organ, N. M.
Brooks, William Winfield.....	Shafter, Texas
Brown, John Lee.....	Lordsburg, N. M.
Brownlee, Rye Cecil.....	Hope, N. M.
Clingo, Frank Edward.....	Bayard, N. M.
Conner, Lewis	Red Rock, N. M.
Dams, Melvin Adam.....	Fort Stockton, Texas
Dils, Fred John	Belen, N. M.
Frenger, Frank George.....	Las Cruces, N. M.
Gibney, Reuben Leo.....	Central, N. M.
Goebel, Harry Wynne	Tyrone, N. M.
Hagerty, Charles Henry.....	State College, N. M.
Haile, Allen Grant.....	El Paso, Texas
Hungate, Louis Hill.....	East Vaughn, N. M.
LeBrun, Edward	Belen, N. M.
Liesse, Louis	Madrid, N. M.
Lindsey, Jamie	Las Cruces, N. M.
Lutz, Clinton Benjamin.....	Santa Fe, N. M.
Mandell, Darwin Casad.....	Mesilla Park, N. M.
Martinez, Luis	East Las Vegas, N. M.
Newton, Wilbur	Abbott, N. M.
Pinson, Floyd	Portales, N. M.
Reinhart, Frank L.	Las Cruces, N. M.
Sheppard, Leroy	Engle, N. M.
Sitton, Alva	Fort Stanton, N. M.
Slater, Charles Harrison.....	Hermosa, N. M.
Walker, Pickard Cady.....	Estancia, N. M.
Wayne, James Gentry.....	Mesilla Park, N. M.
Westerman, Lawrence Berwick.....	Fort Stockton, Texas
Wright, Clarence Leland.....	Animas, N. M.

Pre-Home Economics

Anderson, Cecilia	Hillsboro, N. M.
Bell, Lorena	Mesilla Park, N. M.
Borsberry, May Emma	Las Cruces, N. M.

Field, Helen May.....	Mogollon, N. M.
Knorr, Gladys Irene.....	State College, N. M.
Latham, Ada	Mesilla Park, N. M.
Ramirez, Juana Marta	Mesilla Park, N. M.
Shellhorn, Harriett Alpha.....	Mogollon, N. M.
Wallen, Judith Marie.....	State College, N. M.

Pre-General Science

Alexander, Silas	Las Palomas, N. M.
Arbogast, Bob	Los Angeles, Cal.
Arnett, George Edward.....	Lordsburg, N. M.
Banner, Colvin Roliene	Las Cruces, N. M.
Berrier, Willis Henry.....	Mesilla Park, N. M.
Bowen, William Harold.....	Hondale, N. M.
Burlingame, Paul James.....	Magdalena, N. M.
Cornell, Dudley Edgar.....	Las Cruces, N. M.
Dennis, Jessie Marjorie.....	Hurley, N. M.
Dotson, Ollie May.....	Mogollon, N. M.
Evans, Neil H.	Mesilla Park, N. M.
Galloway, Byron John	Santa Rita, N. M.
Goforth, Artie Violet.....	Hurley, N. M.
Goforth, Stonewall Jaskson.....	Gage, N. M.
Gonzales, Juan	Mesilla Park, N. M.
Hagerty, Francis Edward.....	State College, N. M.
Hall, Richard Peacock.....	Whitetail, N. M.
Harris, Frank Pitman.....	New Albany, Miss.
Harris, LaVerge	Mesilla Park, N. M.
Harris, Paul Bragow.....	Mimbres, N. M.
Hines, Frederick Philip.....	Mesilla, N. M.
Hitchcock, Louise Sroufe.....	State College, N. M.
Hutchings, George William, Jr.	Las Vegas, N. M.
James, Carrie Margaret.....	Valedon, N. M.
Kloss, Phillips Wray.....	Webster Groves, Mo.
Livesay, Katherine	Anthony, N. M.
McKowen, Emmett Campbell, Jr.	Rincon, N. M.
McLendon, Ada	Cutter, N. M.
Macy, Walter Scott.....	Amistad, N. M.
Mills, Charles A.....	Las Cruces, N. M.
Moyer, John Franklin	Hanover, N. M.
Nichols, Fred Henry.....	Las Cruces, N. M.
Price, Eleanor M.....	El Paso, Texas
Robbins, Dorothy Mary.....	Mesilla Park, N. M.
Schmidt, Jornada	Carthage, N. M.
Smith, Edna Aileen.....	Clouderoft, N. M.
Smith, Joseph Louis.....	Mesilla Park, N. M.
Stoes, Phillip Edward.....	Las Cruces, N. M.
Strode, Alfred Chetham.....	Las Cruces, N. M.
Taylor, Mae Ellen.....	Mesilla Park, N. M.
Tinoco, Marie Teresa.....	El Paso, Texas
Turney, Avia	Mesilla Park, N. M.
Turney, Marguerite	Mesilla Park, N. M.
Warren, William Morley.....	Datil, N. M.

Wilkinson, Jack Reynolds.....	Mesilla Park, N. M.
Wilkinson, Walter Jack.....	Santa Rita, N. M.
Williams, Helen Louise.....	Santa Fe, N. M.
Yoast, Dorothy Elizabeth.....	Cutter, N. M.
Yoast, Eva Joanna.....	Cutter, N. M.

Radio Course

Alcock, Harry George.....	Carrizozo, N. M.
Anderson, Fred James.....	Lordsburg, N. M.
Beckwith, Everett Merwin.....	Albuquerque, N. M.
Bennett, Hilary Joseph.....	Las Cruces, N. M.
Bigelow, Charles A.....	Carlsbad, N. M.
Birdwell, Park Russell.....	Las Cruces, N. M.
Branen, Charles James.....	Las Cruces, N. M.
Burch, Clyde	Taos, N. M.
Carpenter, Orvil Guy.....	Pasamonte, N. M.
Chavez, Arthur Lincoln.....	Estancia, N. M.
Chavez, Julian T.....	Las Cruces, N. M.
Cohen, Harry	Tucson, Ariz.
Cook, Donald Hunter.....	State College, N. M.
Franklin, J. Morton	State College, N. M.
Frost, Fred J.....	Gallup, N. M.
Garcia, Gerardo G.....	Mesilla, N. M.
Haile, Allen Grant.....	Mountain Park, N. M.
Hammond, Karl R.....	Alamogordo, N. M.
Hite, Grover Wm.....	East Las Vegas, N. M.
Howard, William Sidney.....	Las Cruces, N. M.
Iles, Louis Taylor.....	Las Cruces, N. M.
Kuykendall, Roy Clayton.....	Abbott, N. M.
Lehner, Vernon Emil	Elizabeth, Ill.
Lemon, Fred	Las Cruces, N. M.
Lester, Edward Rowntree.....	Mesilla Park, N. M.
Morrison, Walter Glen.....	High Rolls, N. M.
Nevares, Ramon	Las Cruces, N. M.
Newton, Alex. Hewey.....	Abbott, N. M.
Randall, Elisha Pratt.....	Taos, N. M.
Riordan, Arthur Metz.....	Flagstaff, Ariz.
Robinson, Ralph Rollin.....	Fort Collins, Colo.
Schenk, Charles Stephen	Las Cruces, N. M.
Steele, Leo P.....	Deming, N. M.
Thaxton, Thomas B.....	Mesilla Park, N. M.
Thompson, Carlos Cleophus.....	Mobeetie, Texas
Wheeler, Albert Wesley.....	Las Cruces, N. M.
Wilson, Barney W.....	Ancho, N. M.
Wood, George S.....	Las Cruces, N. M.
Yates, Byron	Las Cruces, N. M.

Trades Course

Berry, Frank	Yankee, N. M.
DeVaney, Ray	Progreso, N. M.
Gonzales, Adolfo	Torreon, Mexico
Lark, William	Sugarite, N. M.

Liesse, Louis	Madrid, N. M.
Reinhart, Frank	Las Cruces, N. M.
Serna, Alejandro	Santa Rita, N. M.
Sheppard, Leroy	Engle, N. M.
Smith, Joseph Louis.....	Mesilla Park, N. M.
Sturges, Allen J.	Evanston, Ill.
Tinoco, Francisco	El Paso, Texas
Tinoco, Ignacio	El Paso, Texas
Wilkinson, Jack Reynolds.....	Mesilla Park, N. M.

Commerce

Alvarez, Ruben	La Union, N. M.
Beckett, John Thomas.....	Hope, N. M.
Brownlie, Graham Harwood.....	Hope, N. M.
Bruton, Bonnie Mae.....	Hot Springs, N. M.
Conner, Olivett	Red Rock, N. M.
Crowley, Bertha	Central, N. M.
Davis, Bruce Elmer.....	Maxwell, N. M.
Goddard, Mildred	Mesilla Park, N. M.
Gonzalez, Adolfo	Torreon, Mexico
Gonzales, Frank Luis.....	Mesilla, N. M.
James, Clifford Edward.....	Deming, N. M.
Kirwan, Mary Ernestine.....	Mesilla Park, N. M.
Lucero, Arturo S.....	Las Cruces, N. M.
Luchini, Benjamin Daniel.....	Derry, N. M.
McDonald, Thomas Taylor.....	White Signal, N. M.
MacDougall, William Edward.....	Carthage, N. M.
McDowell, Isal Marie.....	Mesilla Park, N. M.
Martin, Clarence Dave.....	Duncan, Ariz.
Medillin, Marta	Mesilla Park, N. M.
Mills, Charlotte Jessie.....	Las Cruces, N. M.
Murray, Willie Campbell.....	El Paso, Texas
Newton, Charles Francis.....	Los Angeles, Cal.
O'Toole, Eleanora	Tyrone, N. M.
O'Toole, Marie Anna.....	Tyrone, N. M.
Richardson, Ruth	Cutter, N. M.
Ricketson, Anna Maude	Mesilla Park, N. M.
Ricketson, Etta Jean	Mesilla Park, N. M.
Roiz, Jose	Torreon, Mexico
Sais, Victor Manuel.....	Albuquerque, N. M.
Salazar, Luciano William.....	Santa Fe, N. M.
Schroeder, Flora Irene.....	Hillsboro, N. M.
Serna, Alejandro	Santa Rita, N. M.
Sipes, Elma	Hot Springs, N. M.
Temple, Leila Eugenia.....	Rincon, N. M.
Tinoco Francisco	El Paso, Texas
Tudor, Tom Gabrielle.....	East Vaughn, N. M.
Wallace, Bertha Mildred.....	La Mesa, N. M.
Ward, Dowell Perrett.....	Reserve, N. M.
Ward, James Steven, Jr.....	Reserve, N. M.
Watson, Aaron Burr.....	Mesilla Park, N. M.
Watson, Gwendolyn	Mesilla Park, N. M.
Wells, Oris Vernon.....	Hermosa, N. M.
Williams, Skelton Taylor	Mogollon, N. M.

Recapitulation**College:**

Graduates	1	
Seniors	8	
Juniors	14	
Sophomores	15	
Freshmen	26	
Special	4	
		<hr/> 68

Pre-College:

Pre-Agriculture	32	
Pre-Engineering	30	
Pre-Home Economics	9	
Pre-General Science	49	
		<hr/> 120

Non-Collegiate:

Radio Operators	39	
Trades	13	
Commerce	43	
		<hr/> 95

Total	283	
Less names counted twice.....	13	
		<hr/>
Net total	270	

ALUMNI

OFFICERS OF ALUMNI ASSOCIATION, 1917-1918.

J. W. RIGNEY, 1911.....	<i>President</i>
MRS. W. A. SUTHERLAND, 1901.....	<i>First Vice-President</i>
JAMES POE, 1908.....	<i>Second Vice-President</i>
STANLEY BROWN, 1916.....	<i>Secretary</i>
OSCAR C. SNOW, 1894.....	<i>Treasurer</i>

-
- ALLEMAN, HERBERT N., B. S. in M. E., 1909. Business, Willowbrook, Cal.
 AMES, WALTER, B. S. in M. E., 1910. Captain U. S. National Army, Linda Vista, Cal. Home address, Las Cruces, N. M.
 ANDERSON, J. A., B. S., 1912. Teacher in city schools, Pasadena, Cal.
 BAKER, STUART KNIGHT, B. S. in E. E., 1910. Captain in U. S. National Army. Home address, 212 W Washington St., Chicago, Ill.
 BENNETT, JOSEPH F., M. S., 1897. Business, El Paso, Texas.
 BENNETT, THERON CATLIN, B. S., 1902. The Theron C. Bennett Co., music publishers, 811 16th St., Denver, Colo.
 BJERREGAARD, A. P., B. S., 1909. Chemist, Canfield Oil Co., 10724 Kimberley Ave., Cleveland, Ohio.
 BLINN, JOHN F., B. S., 1906. First Lieut. U. S. Medical Reserve Corps; Home address, 1028 Church St., Ann Arbor, Mich.
 BLINN, MERLE ANNA, B. S., 1906, (Mrs. U. G. Brown). Housewife, 20 Parsons St., San Francisco, Cal.
 BLOODGOOD, DEAN W., B. S. in M. E., 1908. Irrigation Engineer, New Mexico College of A. and M. A., State College, N. M.
 BONE, NORFLEET GIDDINGS, B. S. in C. E., 1915. Lieut U. S. National Army. Home address, Douglas, Ariz.
 BOONE, HOWARD C., B. S. in M. E., 1910. Electric engineer, Los Angeles, Cal.
 BOUSMAN, SAMUEL I., B. S. in C. E., 1913. Engineer with Chino Copper Co., Hurley, N. M.
 BOUTZ, JOHN WILLIAM, B. S. in Ag., 1906. Farming, Harris, Saskatchewan, Canada.
 BRAINARD, RUTH I, B. S. in H. E., 1913. (Mrs. J. W. Knorr). Housewife, State College, N. M.
 BREWSTER, KENNETH CONE, B. S., 1915. Hospital Corps, U. S. Navy. Home address, Roswell, N. M.
 BRIGGS, CHARLES C., B. S., 1913. Clothing business, Fowler, Kansas.
 BRIGGS, LESLIE PALMER, B. S., in Ag., 1917. De Baca County Assistant Agricultural Agent, New Mexico College of A. and M. A., Fort Sumner, N. M.
 BROWN, ARCHIE A., B. S. in M. E., 1906. Engineer, San Francisco, Cal.
 BROWN, J. MAUGHS, B. S. in C. E., 1908. Professor Civil Engineering, State University, Vermillion, S. D.
 BROWN, LEVI STANLEY, B. S., 1916. U. S. National Army in France. Home address, Las Cruces, N. M.
 BROWN, ULYSSES G., B. S. in M. E., 1906. Engineering draughtsman, City Engineer's office, 20 Parsons St., San Francisco, Cal.

- *BROWNLEE, PAUL, B. S., 1914. U. S. National Army. Home address, Las Cruces, N. M.
- BRUNO, JOSE A., B. S. in M. E., 1906. Planter, Guaymas, Puerto Rico.
- BUVENS, RICHARD HENRY, JR., B. S. in Ag., 1917. U. S. National Army, Leon Springs, Texas; Home address, Mesilla Park, N. M.
- CAMPBELL, WILLIAM E., B. S., 1911. Cutlery business, 124 W. Second St., Los Angeles, Cal.
- CASAD, JESSIE, B. S., 1895. (Mrs. C. E. Rhodes.) Housewife, Apartado 30, El Oro, Estado de Mexico, Mexico.
- CASE, CLARENCE D., B. S. A., 1904. Journalist, 1033 N. Springfield Ave., Chicago, Ill.
- CASE, LAUREN W., B. S., 1904. Las Cruces, N. M.
- *CASEY, EDWIN E., B. S., 1898. U. S. V.
- CHAFFEE, CHARLES LIVINGSTON, B. S. in C. E., 1917. First Lieut. U. S. Army. Home address, El Paso, Texas.
- CLAY, CASSIUS L., B. S., 1913. State Chemist for Louisiana, 431 Royal St., New Orleans, Louisiana.
- CLAYTON, ROBERT LEE, B. S., 1914. Principal Forest Grove High School, Forest Grove, Oregon.
- COCKRANE, LEON JOHN, M. S., 1915. Y. M. C. A. work in France. Home address, 5th floor 124 E. 28th St., New York City, N. Y.
- COE, EDWARD J., B. S., 1899. Draughtsman, Venice, Cal.
- COLEMAN, ELIZABETH, B. S., 1902. (Mrs. Koger). Assistant State Leader in Boys' and Girls' Club Work, New Mexico College of A. and M. A., State College, N. M.
- COLEMAN, RUTH, B. S., 1906. (Mrs. C. D. Miller.) State Director of Industrial Education, Santa Fe, N. M.
- COX, LESTER LYLE, B. S. in M. E., 1917. Draughtsman Ordnance Department, U. S. Navy. Home address, Roswell, N. M.
- CRAVENS, DUVAL G., B. S., 1898. U. S. V. Headmaster Sewanee Military Academy, Sewanee, Tenn.
- DAVILA, VICENTE, B. S. in M. E., 1907. Governor of the State of Luis Potosi, San Luis Potosi, Mexico.
- DEEMER, RALPH B., B. S., 1907. Deputy State Chemist, Purdue University, Lafayette, Ind.
- DESSAUR, PHILLIP E., B. S., 1908, Captain U. S. National Army, Linda Vista, Cal., Home address, Las Cruces, N. M.
- DIAZ, MOISES R., B. S. in Ag., 1913. Ranchman, Saltillo, Coahuila, Mexico.
- EDEE, ARNER G., B. S., 1910. Business, Ballston Spa, N. Y.
- ELLIOTT, JOEL WALLACE, B. S. in Ag., 1915. El Paso, Texas.
- ELLISON, WALTER MONTGOMERY, B. S. in Ag., 1915. Grant County Agricultural Agent, New Mexico College of A. and M. A., Silver City, N. M.
- ENDICOTT, WILLIAM, B. S. in M. E., 1908. General Electric Company, Schenectady, N. Y.
- FITE, AREA BURTON, B. S., in Ag., 1915. Assistant Professor of Horticulture, New Mexico College of A. and M. A., State College, N. M.
- FITZGERALD, PERCY C., B. S. in Ag., 1911. U. S. National Army, Leon Springs, Texas, Home Address, Sligo, Texas.

- FORD, FANNIE, B. S., 1903, (Mrs. Arthur Sloan). Housewife, Clifton, Arizona.
- FOSTER, ELIZABETH C., B. S., 1902. Instructor in English, New Mexico College of A. and M. A., Las Cruces, N. M.
- FOSTER, THORA LUTE, B. S., 1904, (Mrs. D. C. Kissam). Housewife, 6731 Cornell Ave., Chicago, Ill.
- FRAKER, ARTHUR, B. S. in C. E., 1910. Surveyor, El Paso, Texas.
- FRENCH, FRANCES, B. S., 1902. Principal Las Cruces High School, Las Cruces, N. M.
- FRENGER, REYMOND FRANK, B. S. in M. E., 1915. Electrician U. S. National Army. Home address, Las Cruces, N. M.
- FRIEND, LOIS M., B. S., 1909. Denver, Colo.
- FULGHUM, MILDRED ELIZABETH, B. S. in H. E., 1917. Teacher of Domestic Science, Capitan High School, Capitan, N. M.
- GALLAGHER, WILLIAM W., B. S. in M. E., 1908. Sergeant Military Police, Troop A, Camp Funston, Kansas. Home address, White Oaks, N. M.
- GARCIA, FABIAN, B. S., 1894, M. S. A. Director of Experiment Station and Professor of Horticulture, New Mexico College of A. and M. A., State College, N. M.
- GEYER, EARL W., B. S. in Ag., 1914. Pink Boll Worm Investigations, U. S. D. A., 4415 Live Oak St., Dallas Texas.
- GILLIAM, CARMEN, B. S. in H. E., 1915. Teacher of Domestic Science, El Paso City Schools, El Paso, Texas.
- GILMORE, MAE, B. S., 1896, (Mrs. Felix Miller). Housewife, Rincon, N. M.
- GIVEN, GUY C., B. S., 1906, (Ph. D., Gottingen). Assistant in Agricultural Chemistry, State College, Penn.
- GIVEN, PAUL J., B. S., 1914. First National Bank, El Paso, Texas.
- GOEBEL, GORDON, B. S. in E. E., 1910. With Westinghouse Electric Co., Service Department, East Pittsburgh, Pa.
- GRAHAM, ALLEN G., M. S. A., 1907. With Chas. B. Stevens Realty Co., El Paso, Texas.
- GRAHAM, EARL ADDISON, B. S. in M. E., 1906. Assistant Engineer, Electric Bond and Share Co., 71 Broadway, New York City, N. Y.
- *GREEN, THOMAS B., B. S. A., 1905.
- HAGGART, JOHN K., B. S. in C. E., 1912. With the A. T. & S. F. Ry, Topeka, Kans.
- HAMILTON, JAMES GUY, B. S. in Ag., 1915. Bernalillo County Agricultural Agent, New Mexico College of A. and M. A., Albuquerque, N. M.
- HANK, RUSSELL JOHN, B. S. in C. E., 1915. With U. S. R. S., Civil Engineer, P. O Box, 1097, Austin, Texas
- HARNEY, ANETTA MAY, B. S., 1905. (Mrs. O. W. H. Bowers). Housewife, National City, Cal.
- HART, REGINALD H., B. S., 1905. Farmer, Medford, Oregon.
- HELDE, GEORGE G., B. S. in M. E., 1908. Secretary Young Men's Christian Association, Springfield, Mo.
- HENRY, CLAUDE P., B. S., 1908. Teacher, Yazoo City, Miss.
- *HENRY, H. CORNELIUS, B. S., 1908.

- HERMANN, H. LESLIE, B. S. in M. E., 1912. Mining, Ray, Arizona.
- HINES, ELSIE RAYE, B. S., 1911. (Mrs. J. W. Rigney.) Housewife, State College, N. M.
- HOAGLAND, ADA L., B. S. in H. E., 1913. (Mrs. O. K. Sellers.) Housewife, 1925 Arizona St, El Paso, Texas
- HOBBLIT, ORPHA BENNETT, B. S., 1904. (Mrs. M. L. Hobblit.) Housewife, State College, N. M.
- HOLLINGER, EDWIN CONDIT, B. S. in Ag., 1917. Union County Assistant Agricultural Agent, New Mexico College of A. and M. A., Clayton, N. M.
- *HOLT, ALFRED M., M. S., 1896.
- HOLT, EDWIN LEWIS, B. S., 1916. Lieut. U. S. National Army; Linda Vista, Cal.; Home Address, Las Cruces, N. M.
- HOLT, ELGIN B., B. S., 1897. Mining Engineer; member firm of Holt Brothers, Magdalena, Sonora, Mexico.
- HOLT, WALTER E., B. S., 1899. Mining Engineer; member firm of Holt Brothers, Magdalena, Sonora, Mexico.
- HORN BROOK, EARL C., B. S. in M. E., 1908. Manager Shipping Department, Trimble and Lutz Co., Elm Grove, W. Va.
- HULBERT, LUREEN WALKER, B. S. in H. E., 1917. Teacher of Domestic Science, Belen High School, Belen, N. M.
- HUMBLE, CLEAVE WELIFORD, B. S. in Ag., 1917. Instructor in Animal Husbandry, New Mexico College of A. and M. A., State College, N. M.
- JOURDAN, ARTHUR DEIDRICH, B. S. in Ag., 1917. Lieut. U. S. Army, Officers' College, Ft. Leavenworth, Kans.; Home address, Las Cruces, N. M.
- KAUNE, FELICITAS, B. S. in H. E., 1915. Teaching, Santa Fe, N. M.
- KAYS, VICTOR C., B. S. in Ag., 1909; M. S. in Ag. Principal State Agricultural School, First District, Jonesboro, Ark.
- KIRBY, ROBERT STERNS, B. S., 1916. Graduate Student Iowa Agricultural College, Ames, Iowa.
- KNORR, J. WILLIAM, B. S. in Ag., 1913. Assistant Emergency Demonstration Leader, New Mexico College of A. and M. A., State College, N. M.
- LADD, SHALER, B. S., 1917. Lieut. U. S. Marines in France. Home address, Washington, D. C.
- LAFFERRIERE, ARTHUR, B. S. in Ag., 1912. Restaurant business, El Paso, Texas.
- LANE, ULL, B. S., 1915. Lieut. U. S. National Army, American Lake, Wash.; Home address, Las Cruces, N. M.
- LARKIN, R. ROY, B. S., 1894. Southwestern Agent of Ginn and Co., Las Vegas, N. M.
- LLEWELLYN, CHAS. STANLEY, B. S. in Ag., 1916. Farming, Las Cruces, N. M.
- LOCKE, LOWELL FRANCIS, B. S. in Ag., 1917. Pink Boll Worm Investigations, U. S. D. A., Dallas, Texas.
- MACGREGOR, JAMES S., M. S., 1902. Consulting Engineer on Tests of Materials and Instructor in Civil Engineering Department, Columbia University, New York City, N. Y. On leave of absence, with U. S. Government, on Airplane Construction, 16 Hespeth St., Chevy Chase, D. C.

- MAYER, BERTHA, B. S., 1911. White Oaks, N. M.
- MAYER, PAUL W., B. S., 1911. Y. M. C. A., El Paso, Texas.
- MAYNARD, EDWARD HACKSON, B. S. in Ag., 1915. Graduate Student, Iowa Agricultural College, Ames, Iowa.
- MCCOWEN, HENRY C., B. S. in Ag., 1911. Ranchman, Elida, N. M.
- McFIE, MAUDE ELIZABETH, B. S., 1903. (Mrs. L. B. Bloom.) Housewife, Santa Fe, N. M.
- *McGRATH, LEMUEL C., B. S., 1894.
- MEAD, CHARLES E., B. S., 1898. Druggist, Mission Drug Store, Colton, Cal.
- MEAD, IVAH R., B. S., 1898. (Mrs. Shallanberger.) Housewife, Larned, Kansas.
- MEEKER, WILLIAM CORY, B. S., 1900. Pastor Second Presbyterian Church, Topeka, Kans.
- MEERSCHIEDT, HILMAR, B. S., in Ag., 1917. Lieut. U. S. National Army; Home address, San Antonio, Texas.
- MERRILL, SEWALL EGBERT, B. S. in Ag., 1911. County Agricultural Agent, Los Vegas, Nevada.
- METCALF, ORRICK B., 1903. Ranchman, Mangos, N. M.
- *MILLER, CHARLES DEWITT, B. S., 1906.
- MILLER, JOHN GEORGE, M. E., 1907. Director of Manual Training, Venice Polytechnic High School, Venice, Cal.
- MILLER, PEARL C., B. S., 1904. (B. S. Drexel Institute, 1906). Professor of Home Economics, New Mexico College of A. and M. A., State College, N. M.
- MITCHELL, MAURICE MORTIMER, B. S. in C. E., 1915. Lieut. Division Ordnance Officers U. S. National Army; Home address, Silver City, N. M.
- MITCHELL, S. R., M. S., 1909. (B. S. Purdue University). Science Teacher in City Schools, Redondo, Cal.
- MORRIS, ROBERT EDGAR, B. S. in E. E., 1914. With the Mountain States Telephone and Telegraph Company, Albuquerque, N. M.
- MOTT, ROWENA, B. S., 1904. (Mrs. Oscar L. Poe). Housewife, Anthony, N. M.
- MUNDELL, JESSE E., B. S. in Ag., 1908. Superintendent U. S. Dry Farming Experiment Station, Big Springs, Texas.
- NABOURS, BENJAMIN F., B. S. in M. E., 1905. Forest Service U. S. D. A., Capitan, N. M.
- NELSON, INA M., B. S., 1903. (Mrs. J. H. Wiese). Housewife, 5623 Forty-second Ave., Seattle, Wash.
- NEWBERRY, LEAH NORA, B. S., 1901. (Mrs. C. D. Case). Housewife, 1033 N. Springfield Ave., Chicago, Ill.
- NEWBERRY, MINNIE WILSON, B. S., 1901. (Mrs. W. A. Sutherland). Housewife, Las Cruces, N. M.
- OGLIVIE, KENNETH B., B. S., in E. E., 1914. Electrician Otis Elevator Co., El Paso, Texas.
- OLIVER, RUTH E., B. S., 1910. (Mrs. —). Housewife, Central, N. M.
- PATTISON, WILLIAM, B. S. in M. E., 1908. Farming, Howard, Mont.
- PEET, BERTHA, B. S., 1906. Teacher of Music, Williams, Ariz.
- PETERSON, ALBERT H., B. S., 1896. Mechanic, 658 East 95th St., Chicago, Ill.

- PHELPS, CARRIE PADON, B. S. in H. E., 1913. Home Demonstration Agent, Grant County, Silver City, N. M.
- PHELPS, RUTH VIRGINIA, B. S. in H. E., 1916. Teacher of Domestic Science, Las Cruces High School, State College, N. M.
- POE, JAMES R., B. S. in Ag., 1908. Ranchman, Mesilla Park, N. M.
- POST, CHARLES LEWIS, M. S., 1900. Surveyor for Dona Ana County and U. S. Deputy Mineral Surveyor, Las Cruces, N. M.
- POWERS, HOMER PATRICK, B. S. in Ag., 1916. Socorro County Agricultural Agent, New Mexico College of A. and M. A., Socorro, N. M.
- POWERS, JOHN E., B. S. in C. E., 1911. U. S. National Army, Leon Springs, Texas; Home address, Santa Fe, N. M.
- POWERS, WILBUR L., B. S. in Ag., 1908. Professor of Drainage and Irrigation, Oregon Agricultural College, Corvallis, Oregon.
- PRITCHARD, J. LEROY, B. S., 1909. University of California Hospital, San Francisco, Cal.
- QUESENBERRY, GEORGE R., B. S. in Ag., 1911, in charge of College Farm, New Mexico College of A. and M. A., State College, N. M.
- QUESENBERRY, JAMES R., B. S. in Ag., 1912. In charge of New Iberia Breeding Station, Jeanerette, La.
- QUINLAN, JOHN EDWARD, B. S. in C. E., 1915. With Chino Copper Co., Draughtsman, Hurley, N. M.
- QUINTERO, FERNANDO, B. S., 1908. Agricultural Agent, Taos, N. M.
- QUINTERO, JOSE, B. S. in M. E., 1907. Assistant Professor of Chemistry, New Mexico College of A. and M. A., State College, N. M.
- *RAMIREZ, RAFAEL, B. S. in Ag., 1905.
- REA, CASPER CONRAD, B. S., in I. E., 1917. U. S. National Army, Leon Springs, Texas; Home address, Riddle, N. M.
- REDDING, EDWARD L., B. S. in C. E., 1910. With Chino Copper Co., Santa Rita, N. M.
- RHODES, CLARENCE E., B. S., 1896. Superintendent Cyanide, El Oro Mines, Apartado 30, El Oro, Estado de Mexico, Mexico.
- RIGNEY, JOSEPH W., B. S. in Ag., 1911. Assistant Professor of Horticulture, New Mexico College of A. and M. A., State College, N. M.
- SAGE, ARCHIBALD BRUCE, B. S., 1900; M. S., 1911. City Superintendent Manual Training, Dallas, Texas.
- *SANCHEZ, M. A., M. S. A., 1901.
- SCHUTZ, HARRY H., B. S., 1905, (B. S. A., Cornell, 1907). Business, Caples Building, El Paso, Texas.
- SMITH, HERBERT G., B. S. in Ag., 1913. Assistant in Dry Land Agriculture, U. S. D. A., Tucumcari, N. M.
- SNOW, OSCAR C., B. S., 1894. Ranchman and President First National Bank of Las Cruces, N. M., Mesilla Park, N. M.
- STANDLEY, PAUL C., M. S., 1907. Assistant Curator, Herbarium, U. S. National Museum, Washington, D. C.
- STANLEY, ISAAC H., B. S., 1898. Chino Copper Co., Tyrone, N. M.
- STEEL, JAMES A., B. S., 1908, (M. D., Columbia University). Physician and Surgeon, Mesilla Park, N. M.
- STEEL, MATTHEW, M. S., 1901, (Ph. D., Columbia). Assistant Professor of Biological Chemistry, University of Missouri, Columbia, Mo.
- STEWART HERBERT CLYDE, B. S. in Ag., 1909. Manager Fernandez Land and Cattle Co., San Mateo, N. M.

- STEWART, RUPERT L., B. S. in Ag., 1911, (M. S. A. Cornell, 1914). Professor of Agronomy, New Mexico College of A. and M. A., State College, N. M.
- STIRLING, STUART. B. S. in Ag., 1917. Lincoln County Agricultural Agent, New Mexico College of A. and M. A., Carrizozo, N. M.
- STONEKING, JAY B., M. S. in M. E., 1908. Road Expert for DuPont Powder Co., Wilmington, Del.
- STOVER, MAGGIE MAY, B. S., 1908. (Mrs. Reading). Housewife, Bisbee, Ariz.
- STUART, SADIE MAY, B. S. in H. E., 1914. Teacher of Domestic Science in Public Schools, Deming, N. M.
- SUTHERLAND, WILLIAM A., B. S., 1898. Member law firm of Holt and Sutherland, Las Cruces, N. M.
- SWEET, JACOB A., B. S. in C. E., 1908. Stock feeding, Cogdell, Ga.
- SWEET, LOTTIE, B. S., 1898. School Principal, 847 North Broadway, Santa Ana, Cal.
- TAYLOR, LYTON RAYMOND, B. S., 1917. Attorney at Law, Las Cruces, N. M.
- THAXTON, ELEANOR, B. S., 1915. Teaching, Mesilla Park, N. M.
- *THOMAS, HALBERT E. P., B. S., 1900.
- THOMAS, LEONARD G., B. S. in C. E., 1913. State Engineer's Office. Sacramento, Cal.
- THOMAS, WILLIS, B. S., in I. E., 1917. Geodetic Survey, Marathon, Texas; Home address, Gallup, N. M.
- THOMASSON, JESSE HUGH, B. S. in Ag., 1915. Teaching, Downs, Kans.
- *THOMPSON, RUTH, B. S. in H. E., 1912. (Mrs. R. E. Willard).
- TINSLEY, JOHN D., B. S., 1899. Agricultural Demonstrator Santa Fe Railroad, Pineland, Texas.
- URANGA, ARMANDO, B. S. in Ag., 1909. Chemist, Estacion, Agricola Experimental, San Juan Bautista, Tabasco, Mexico.
- VICKERS, GATES STIRLING, B. S. in Ag., 1917. Instructor in Poultry Husbandry, New Mexico College of A. and M. A., State College, N. M.
- WAGNER, FAY ARTHUR, B. S. in Ag., 1916. Assistant in Dry Land Agriculture, U. S. D. A., Big Springs, Texas.
- WEDDELL, JUSTIN R., B. S., 1908. President and General Manager Weddell-Schmidt Advertising Co., 1900 Euclid Ave., Cleveland, Ohio.
- WHARTON, JAMES EDWARD, B. S., 1917. First Lieut. U. S. Army; Home address, Douglas, Ariz.
- WILSON, C. P., M. S., 1908. Secretary to the President, New Mexico College of A. and M. A., State College, N. M.
- WILSON, EARL J., B. S. in Ag., 1913. Sierra County Agricultural Agent, New Mexico College of A. and M. A., Hillsboro, N. M.
- WILLIAMS, AGNES, B. S., 1894. (Mrs. Herbert). Housewife, Roswell, N. M.
- *WILLIAMS, ARTHUR F., B. S., 1897.
- WILLIAMS, GEORGE M., B. S., 1898. Farming, Las Cruces, N. M.
- WINDSOR, K. O., B. S., 1912. Lieut. U. S. National Army, Linda Vista, Cal.; Home address, Santa Fe, N. M.
- YOUNG, DONALD W., B. S., 1910. Assistant to State Fuel Administrator, Albuquerque, N. M.; Home address, Las Cruces, N. M.

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